THE VETERINARY JOURNAL

AND

Annals of Comparative Pathology.

AUGUST, 1895.

TUMOUR ON THE URETERS OF A FOAL.

BY JOHN CONNOCHIE, ESQ., M.R.C.V.S., AYTON.

THE subject of the above case was a foal, seven weeks old. Shortly after birth it was noticed that the animal urinated frequently, and that some urine escaped from the umbilicus. Cold water and an astringent lotion were applied to the umbilicus, and in the course of a fortnight the opening closed up and the flow of urine was arrested. The foal seemed to be thriving well, and was otherwise apparently healthy, when suddenly one forenoon it showed symptoms of acute colic. A dose of castor oil was given, followed by doses of chlorodyne, at intervals of two and three hours. Blankets wrung out in hot water were kept in constant application to the abdomen, and an enema was given occasionally as no fæces were passed. In addition to the ordinary symptoms of colic, the foal strained severely and kept the penis almost constantly protruded. Early the following morning some fæces were passed, with difficulty, after a good deal of straining, and this seemed to relieve the animal considerably as it became much easier, but the breathing was short and hurried and the pulse quick. It was then noticed that the urine was very dark in colour, in fact, it seemed nearly pure blood, as it stained the hand if allowed to trickle over it. The animal kept fairly quiet throughout the day, and drank milk frequently, but towards evening the pain returned more severe than ever, and the little sufferer succumbed at midnight.

Post-mortem.—On opening the abdomen immediately in front of the umbilicus a large body, like a big bladder, presented itself to view, and this turned out to be actually the

bladder enormously distended. On opening it nothing except blood was visible, and it was mostly coagulated. I could not even smell urine. The bladder was firmly adherent to the umbilicus, the remnant of the umbilical cord containing the urachus being very much thickened. Immediately in front of the bladder, and covered by it, when in a distended state, was a tumour rather bigger than a man's hand. It was situated right between the ureters, in short, they seemed to become fused up in it, as they could not be traced between the tumour and the bladder, while between the kidneys and the tumour they were very visible and full of urine. The superior surface of the tumour was firmly attached to the lower surface of the lumbar vertebræ. On opening it, it seemed of a cystic character, with very thick walls, and contained some semi-fluid broken-down looking matter, with no smell and no appearance of pus. The kidneys were enlarged, flabby, and had a lobulated appearance. The distended bladder, pressing on the rectum, accounts for the non-passage of fæces.

The kidneys were very large, weighing twenty-four ounces each. They were pale and their consistence was less firm than normal. The capsule was with difficulty removed. On section, the surface was of a uniform pale salmon colour; one could not distinguish cortex from medulla. It was sodden and looked as though it had been dipped in boiling water. The pelvis was dilated and the index finger could easily be pushed into the opening communicating with the ureter. The ureters were greatly dilated and thickened for about six inches, when they appeared to end in the tumour-like mass. When they emerged from it their walls and calibre appeared normal. The tumour which, as Mr. Connochie says, was cystic like, was lined by a smooth shining membrane, and closer examination revealed the fact that the growth was developed in connection with a large vein, the valves of which could be readily made out on the membrane lining the inside of the mass; this membrane was, in fact, the inner coat of the vein. Sections from the hardened kidney and tumour were examined microscopically. The tumour was a sarcomatous growth, consisting of large round cells and a good deal of hyaline and fibrous material, staining crimson with piero-carmine. In the kidney, many of the tubules in the medulla were dilated into cavernous spaces, void of epithelium. The collecting tubes in the cortex were dilated and thickened, and their pressure caused atrophy of many of the convoluted tubes in parts; the epithelium of these being

in a condition of catarrh and fatty degeneration. The capsule was thickened. The muscular coat of the arteries was hypertrophied, in some cases obliterating the lumen. It is most likely that the tumour was congenital and that the hæmorrhage was due to a rupture into the ureter of the vessel wall in connection with which the tumour was developed.)

SOME EXPERIENCES OF CASTRATION.

BY "HIRUDO."

THERE is perhaps no operation which the young practitioner is called on to perform that causes him more anxiety than that of castrating colts. If he is skilful and successful in this part of his duties, it often greatly assists him in gaining practice, while failure or want of dexterity is very prejudicial.

It may, therefore, not be uninteresting if the opinions formed from the experience of a good many castrating seasons are recorded, even although there is nothing particularly new in them. I have very little doubt but that colts can be as safely castrated by the actual cautery as by any other method; there are plenty of practitioners who have operated in this manner for years and with almost uniform success; still, it is at the best a clumsy and barbarous procedure, and the pain inflicted is greatly in excess of that which is entailed by ecraseur or torsion forceps.

Casting and Securing.—It is best in every case to use the hobbles. Put on a twitch and then the blinders, and there is no difficulty in getting the hobbles on.

When the colt is thrown and lies on his side, pass the end of the hobble chain round the neck and back along the breast between the four legs, and back again towards the neck, and pull on it (this brings the legs well forward). Now, holding firmly to the chain, have the animal pushed on to his back, a good man holding on to each fore-leg, pull the chain quite tight and fasten it by putting a little bolt between a link of the portion of chain coming round the neck and a link of that portion of the chain that you are pulling on. Now put on a back rope. Take a rope twenty feet long and double it. Fasten the doubled end to one hind-leg below the hock, and keeping it in front of the stifle pass it back to the tail on which you have placed a crupper (to keep the back rope from slipping forward). A loop of stout line will do for this crupper; having put the back rope through the crupper, bring it in front of the stifle and fasten it to the other

hind-leg, pulling as tight as possible, and at the same time pushing the hind-legs well down towards the abdomen.

Thus secured, there is little danger of the animal hurting himself, the legs are out of the operator's way, and the scrotum is well exposed. In using the hot iron, open the scrotum with the iron, and let the hole made be a small one; after the clam is on, divide the posterior portion of the cord with a knife, and sear off the anterior portion; pour a little solution of perchloride of mercury, 1 in 500, into the cavities. Take off the back rope, unscrew the nut from the bolt holding the chain, and pull the chain from below the neck before placing the animal on its side.

Adopt the same means for fastening when using the ecraseur, or when operating by torsion. I have had more experience of the ecraseur than of the torsion instrument, and will speak of the former. After opening the scrotum, and let the incision be a large one and well forward, place the chain over the testicle, and grasping the anterior part of the cord between the finger and thumb, pull it well up and give it to an assistant to hold, telling him to pinch it tightly and to pull it up; it is now tense, and disregarding altogether the rest of the organ, see that the chain of the ecraseur is deep down on the cord as you are screwing it home. If the testicle does not come off after the button of the ecraseur has travelled back to the handle, take hold of the chain and *rip* it through the tissue that still needs separating. Pour in a little of the perchloride solution and unfasten the rope and chain as before.

A piece of mesentery in fat colts occasionally protrudes; pull it up and cut it off before allowing the animal to rise. Have a leather head collar on as well as a halter, as halters have a nasty knack of slipping over the ears and coming off if the colt struggles much.

Sometimes, when the protruding omentum has been cut off and sufficient has not been removed, it adheres to the lips of the scrotal wound and grows out as a big granulating mass. To remove it cast the colt, and having put on a steel clam, sear through the pedicle of the mass.

Always cast the animal in a grass field if possible; straw is often dusty, and besides it gets into the chain and hobbles, and again one is apt to lose instruments, etc., in it.

When castrating without throwing the colt, the ecraseur is the best possible instrument to use. To secure the animal put on a twitch and the blinders; I think that it is best not to have a foot picked up. Stand on the near side, and grasping

the testicle make a big incision, and again see that it is well forward. Pull the anterior portion down and push the chain well up on this part of the cord and there need be no fear of hæmorrhage.

Both testicles can be taken off while the operator stands on the near side, though some practitioners take the left testicle off while standing on the near side and the right from the off side.

If wooden clams are used one precaution should be specially observed—see that the clams are long enough. They can do do harm by being too long, while I have known the severed artery escape from too small a clam in a big horse. The dressing for the clam may be made with thick gum solution and powdered sulphate of zinc and exsiccated sulphate of iron, or an ointment of perchloride of mercury, 1 in 20, may be used. While on the subject of clams I may say that it is quite possible to recover the divided spermatic artery if there is great hæmorrhage. In the accident mentioned above, where the artery escaped from the clam and there was every indication of fatal bleeding, I cast the horse, which weighed close on a ton, and put on the back rope, and after removing a pound or two of clotted blood from the scrotum managed to get the artery and put a clam on it, and the animal did well.

A word or two about rigs. They should be fastened according to the plan that I have endeavoured to describe for ordinary colts, but before attempting the more serious undertaking of opening the abdominal ring and putting the hand in, the rectum may be explored after an incision has been made in the scrotum to the outside and forward of the position where it is usually made. If the testicle can be felt per rectum, it is pushed up through the canal and a needle and thread passed through it from above; it can then be pulled up and taken off with the ecraseur. Should it be necessary to insert the hand into the abdominal cavity, a hooked knife is the best instrument to use in opening up the scrotum, and cutting down on to the ring. After the testicle is found and removed by the ecraseur, the parts should be well washed with perchloride of mercury solution, and then pulling the scrotum well up, take a few deep stitches with a seton needle and tape (going close to the abdominal parietes) and allow them to remain in for a week. As to after treatment of castrated colts, when the weather is favourable, turn the colts out on the day after the operation. In the case of older animals or in that of colts

previously kept in boxes, they should be placed where there is plenty of fresh air, the food should not be too stimulating—grass when it can be had, or bran is the best diet—and they should get exercise.

In castrating bulls I have never used anything but the knife. Open the scrotum, divide the posterior portion of the cord, and taking a turn of the anterior part round the index finger of the left hand pull on to it firmly; now push the knife in as deeply as it can be got, cut through the stretched vascular portion and the testicle is off. There is not the slightest danger of hæmorrhage, even in big bulls. They may be done in this manner either in the standing or in the recumbent position. Where bulls are thrown for castration they should be cast on the left side and the right hind-leg drawn well up towards the shoulder, by putting a halter round the neck, placing the shank round the leg above the hock and back to the neck, and then pulling up and tying.

At the request of humanitarian persons I have twice operated on colts and once on a calf under chloroform, and I am bound to say that my curiosity is abated with regard to castration while the animal is narcotised. The calf did all right, the only drawback being that I was an hour in the yard instead of five minutes, but I had trouble with both the colts. One of them lay for quarter of an hour after the operation was completed unable to rise, and when he did get up it took four men to support him into his box, where he stood swaying from side to side a most dejected-looking piece of horseflesh. It doubtless was a coincidence, but in both cases there was a great deal of swelling necessitating two or three subsequent visits. It should be remembered that, as pointed out by Lauder Brunton, it is more dangerous to perform a painful operation on an animal slightly narcotised than when no anæsthetic is used, for in the latter case the irritation of the sensory nerve, though it has a tendency to cause syncope this tendency is counteracted by the irritation causing a reflex contraction of the arterioles, and a raising of the blood pressure, while in slight anæsthesia this compensating reflex is paralysed, and the animal may die from shock. Anyone who has seen colts start feeding directly after the operation, as ordinarily performed, must admit that though doubtless a painful operation, the pain is of the most evanescent character.

To sum up, I believe that the best way of castrating horses is to operate with the ecraseur in the standing position. Occasionally a horse will be found so rough that it is impossible to do him standing. I don't think it advisable to

fight too long with them, but to resort to casting. There is really no occasion why a veterinary surgeon who has experience in castrating horses when cast should not attempt the operation in the standing position. As a rule, after one incision is made all that the colt does is to crouch down, or even to lie down, but a resolute man can keep hold of the ecraseur and finish the operation even then without difficulty.

I again repeat that the main thing to see to is that when the chain is tightening it is well up on the anterior part of the cord. Those who condemn the standing operation are usually those who have no experience in performing it themselves.

I have had one scirrhous cord following castration by the ecraseur, but have treated a good many that developed after the operation by actual cautery. Their removal is usually accomplished by dissecting out the tumour from its adhesions by the knife and fingers, and taking it off with the ecraseur or with the actual cautery. On two occasions in my practice the owners were afraid to have the tumour removed in this manner, and in each case, after casting the colt, I made a deep incision, going into the middle of the growth (which contained a quantity of straw-coloured serum and some myxomatous-looking tissue, which I scooped out), syringed the cavity with an astringent solution, sulphate or chloride of zinc, and in a short time the whole thing had disappeared.

A spare chain for the ecraseur should always be carried, as occasionally one breaks. It is very important that the chain be kept aseptic, and it is not an easy matter to ensure its being in this condition. Boil it and pick out any bits of tissue with a needle; then boil again, and after drying pass it several times through a gas-flame and keep it in a bottle of strong carbolic oil. Before using wipe it in a clean cloth and dip it as well as the knife in sublimate solution (1 in 500).

I fear that my remarks have been somewhat incoherently put together. Still, if they are helpful to some of my younger professional brethren, and encourage them to attempt an operation which requires merely a little dexterity and determination for its performance, I am satisfied.

TEXAS FEVER.

BY W. WILLIAMS, F.R.C.V.S., F.R.S.E., PRINCIPAL, NEW VETERINARY COLLEGE, EDINBURGH.

LATER studies of this disease have brought to light that it assumes two forms. An acute fatal type seen in the hot

summer months and a mild, rather prolonged, usually non-fatal form recognised only by an examination of the blood which must determine the presence of the micro-parasite in the red corpuscles and their approximate rate of destruction. This form is seen in the autumn when the heat of summer has passed away, also during October and November, and rarely in the first week of December. It is stated that the difference between the acute and mild type is accounted for by the fact that during a stage of its life—the small stage—the Texas Fever parasite circulates in the blood in a condition differing from that observed in acute cases; that in the latter it rapidly destroys the blood corpuscles giving rise to hæmoglobinuria, whereas in the mild form the destruction of the corpuscles is much more prolonged, and not associated with hæmoglobin in the urine.

It has also been observed that in certain cases when an animal has recovered from the acute attack, and the number of red corpuscles nearly reached the normal number, they have again diminished, and many of them contain the parasite in its small stage. The reason for this recurrence of the disease is not clearly defined, whether these second attacks are merely relapses or re-infections. As already stated the symptoms of the mild form are indefinite and may be confused with a variety of mild diseases, but the ACUTE FORM is manifested, suddenly in the hot summer months, and simultaneously in all animals of a herd which have been exposed to the same infection together.

The fever, characterised by a temperature of from 105° to 108° F., precedes outward symptoms for several days, the animals being apparently quite well. The pulse and respiration then become accelerated, and the urine is now observed to have the appearance of blood varying in colour, reddish, claret, or blackish red-water, hæmoglobinuria, in the most acutely fatal cases; out of 46 fatal cases (Bureau of Animal Industry, Washington, 1893), hæmoglobin was found in the urine in the bladder of 33 after death. It is uncertain whether this condition of the urine is present in all cases of the acute form, the opinion of the reporters to the American Bureau being that it "depends upon the rapidity with which the red corpuscles are infected and destroyed. A slower destruction may allow other organs to excrete the débris and thus forestall the discharge of hæmoglobin in the urine." But if free from hæmoglobin, the urine at the height of the fever is found to contain a small quantity of albumen, to have a specific gravity of 1030–40, may be strongly alkaline and

effervescent when treated with acids; but as the disease advances its specific gravity falls to 1010–12, its reaction becoming neutral or slightly acid. It sometimes contains small numbers of red corpuscles which may be derived from small hæmorrhages in the pelves of the kidneys regularly observed *post-mortem*.

The bowels are, as a rule, constipated during the high fever, but as the fever subsides, the fæces become softer and tinged with bile. After a few days' illness, the debility becomes very great, and whilst the animal is standing, trembling of the hind-quarters and limbs are prominent features in many cases; the blood is then found to have become very thin, pale and watery, due to the destruction of the red corpuscles. In the earlier stages, if freshly-drawn blood be allowed to stand, the serum will be found to present a very dark red colour, indicating the presence of much colouring matter in solution. Later on, this colour may not be present, but thinness of the blood, owing to destruction of the red corpuscles, seems to be the "most essential character of Texas fever."

The duration of the disease varies, proving fatal or disappearing in a few days; recovery, however, is associated with great debility; degenerations may occur in organs, and frequently there are relapses. Some animals never regain their health; in others, recovery takes place after weeks or months. High temperature rarely lasts longer than eight to ten days; it is then followed by a period of normal or subnormal temperature, the falling of the temperature marking the cessation of the destruction of the corpuscles, and the disappearance of the parasite from the blood. The mortality varies greatly. A mid-summer outbreak, when acute in its nature, is the most fatal, and from this time there may be all gradations towards the mild non-fatal form of the disease.

Etiology.—Several observers have reported the discovery of various forms of bacteria in this disease. In 1883, Salmon described a diplococcus obtained from spleen cultures. Detmers found bacilli and micrococci in the liver, but none in the blood; and in 1888, Billings claimed the discovery of what he terms the "true germ," an ovoid bacterium staining at the ends, similar to that of swine plague. All these contentions, however, have now been apparently terminated by the discovery of a parasite in the blood corpuscles, conveyed from southern to northern cattle by cattle ticks (*Boophilus bovis*). At the experimental station of the Bureau, near Washington, it was found by experiments in 1889, that the disease can be produced by ticks artificially hatched in the laboratory.

The parasites thus conveyed are found in certain proportions of the red corpuscles in the form of rounded or somewhat ovoid or pyriform bodies, isolated or in pairs, in the acute form of the disease; whilst in the mild form it appears that from 5 to 50 per cent. of the red corpuscles are found to contain coccus-like bodies, sometimes on the border, but outside the corpuscles; they are from $\frac{1}{27,000}$ to $\frac{1}{30,000}$ of an inch in diameter, sometimes dividing into two; they, as well as the larger pyriform bodies seen in the acute form stain with aqueous solutions of aniline dyes, and with hæmotoxyline. Both the large and small forms are considered to be different stages of the same parasitic protozoa (Pyosoma bigeminum, Dr. Theobald Smith). The smaller ones are found in cattle exposed to the disease late in the season, or during a second attack or relapse after passing through an acute attack and in milder cases during or previous to the season (hot) of the acute disease.

Post-mortem Appearances.—Congestion of the vessels and occasional patches of extravasation in the sub-cutaneous tissues, blood sometimes thin and watery, lungs normal or discoloured by congestive patches, heart congested; petechial patches on peri- and endocardium, spleen-congested, its capsule streaked from distension of its vessels; the weight of the organ varies, according to the stage of the disease in which the animal dies, the more rapid the fatal termination the larger the spleen; generally it is from two to four times its natural weight, distended, firm to the touch, its capsule attenuated, the pulp dark brown, glistening, and homogenous. The markings of the Malphigian bodies and of the trabeculæ have disappeared.

The liver is gravely altered, enlarged, sometimes of a dark colour from blood congestion, or light coloured from extreme bile-engorgement, gall bladder full of thick grumous bile; when incised, the cut surface presents a uniformly brownish-yellow colour, or else a mottled appearance, also seen on the surface. There is occlusion of the biliary canaliculi and ducts, and a more or less extensive fatty degeneration of the liver-cells, and a tendency to necrosis of the inner zone of the lobules.

The kidneys vary in colour according to the severity and stage of the disease; when death occurs in the early stages—when the bladder contains port-wine coloured urine, they are enlarged and of a uniform dark brownish-red colour, and the vessels are uniformly distended with red corpuscles; the secreting structures are not seemingly altered. In cases which die after the acute stage and fever have passed away, they are paler than natural and quite flabby, having pigmentary deposits

in the convoluted tubules, and their epithelium so loaded with a reddish-yellow pigment that they are easily traceable in their windings by their colour; in those cases where the capillaries are filled with red corpuscles the microbes are usually found in all the corpuscles. Extravasations of blood are found in the pelvis and ramifications, and in most cases the bladder is found to contain urine mixed with hæmoglobin, whilst ecchymosed spots are seen on the inner surface.

The digestive apparatus, with the exception of the abomasum, which is frequently congested, generally presents no definite alterations. The pyloric portion of the abomasum is found to contain deep ragged excavations with hæmorrhagic bases. The constancy of these ulcers, probably the result of vascular occlusion, is considered by Moreau Morris to be more certain indication of Texas fever than any other lesions commonly present.*

The intestinal lesions are congestions and pigmentation; they contain an increased quantity of bile. There are also tubercles containing very small nematode worms, similar to those discovered by Ostertag in cattle slaughtered at Berlin, and called by him *Strongylus convolutus*. These are, however, accidentals, and have no connection with the diseases, as supposed by Gamgee.

Prevention and Treatment.—If the disease is suspected, the herd should be examined thoroughly for ticks, and the animals' temperature taken. *The combination of ticks and fever, or the presence of the former in a locality where they do not naturally exist, may be considered a sure sign of the imminence of Texas fever.* (The italics are mine.) If the ticks are found they should be carefully removed, and the cattle at once transferred to uninfected grounds. The examination for ticks should be done repeatedly, and all ticks destroyed. These measures may not prevent all attacks, nor cut short the disease after it has once shown itself; but Reporters are satisfied that fewer animals will succumb. A single infection is sufficient to cause severe and prolonged disease, as shown by the injection of blood; but the mortality seems to be lower than in natural exposures, where the infection is intensified with every additional tick.

No special line of medical treatment has as yet been tried. Quinine and its preparations are proposed as possibly valuable, and methylene blue (recommended for malaria) is referred to as worthy of trial.

* These excavations are not infrequently found in British and other cattle perfectly free from disease.—W. W.

Inoculation with the blood of Southern cattle, apparently healthy, and with that of diseased Northern cattle, transmits the disease, and if this is done after the hot summer weather has passed, the induced disease may be of a mild character; but it appears that immunity is not assured, as it is reported by Dr. Dinwiddie that of vaccinated and non-vaccinated cattle sent to Texas 66⅔ per cent. of the vaccinated and 88⅔ of the non-vaccinated died.

Had there been a well-marked immunity conferred by inoculation, it would have been possible to have improved the method of procedure; and perhaps carefully-prepared blood serum, freed from the organism, might have been of great value. One remarkable instance is mentioned in the report, namely, that the Texas-fever parasite was found in the blood of a North Carolina animal three years after it had left the permanent infected territory.

Similar diseases are reported to prevail in the marshy regions of Roumania, investigated by Babes in 1888, disseminated largely by draught oxen. In the Cape of Good Hope, discovered in 1870, also conveyed from place to place by yoke oxen by keeping communication with the territory north of the colony, these cattle, like those of the Southern States, seem not to infect others directly, but they infect ground over which they have passed.

Infected pastures have been found to be harmless to sheep, and it is thought that other domesticated animals may graze unharmed in such pasture.

The discovery that the disease is conveyed by ticks, explains what has hitherto been very mysterious, namely, that Northern cattle become affected by the disease, when pastured on lands previously grazed by Southern cattle apparently in perfect health. This fact leads to the conclusion that Southern cattle recovered perhaps from previous attacks have acquired immunity, though covered with ticks.

Although it is clearly demonstrated that Southern cattle are dangerous when they bear the cattle tick, and that this tick conveys the micro-parasite from Southern cattle, but whether the disease is transmitted by diseased Northern cattle has led to some controversy. That such transmission is very rare (the reporters say) is evident, otherwise there would be no discussion and no divergent opinions, but if we turn to the life history of the tick we shall find the explanation sought.

Sick natives (Northern cattle) have ticks on them, but only those which survive the disease or die after a prolonged

attack ripen the tick on their bodies. Those which die of an acute attack in a short time after infection have only immature ticks on them. If the fever has occurred early enough in the season to permit a second generation of ticks to appear before the cold weather arrives, we may expect Texas fever in fields on which sick natives only have been pastured. Usually the first outbreak occurs in August, and the second to be looked for in late September or early in October, is so mild as to pass unobserved. If, however, the first outbreak occur in July the second may appear in September, and perhaps be of greater virulence.

When the disease is induced by inoculation, experiments have proved that it has no contagious properties, in fact, that it is not transmitted by cohabitation, but by the intermediation of the cattle tick. But as already stated, it seems to be concluded that preventive inoculation has so far been a failure, for the effect produced in the body of an animal by the destruction of the red corpuscles equal in amount to all those circulating in the body at any given time should make much more impression than any method of inoculation is likely to do. Yet such an attack not only does not prevent a second attack, but may not prevent death during a second attack. Aside from the difficulties attending the production of immunity under any circumstances, the difficulties of preparing a "vaccine" according to the method hitherto practised are, at present, insurmountable. The micro-organism cannot be cultivated. The infection of Northern cattle might be prevented by careful destruction of the ticks upon Southern cattle before their removal to northern territories, or by prohibiting their migration during hot weather. These suggestions are not however made by the Reporters, but they attach great importance to the protection of animals taken south into permanently infected pastures. They state that it is probable that if calves be taken they may, without treatment of any kind, survive the infection upon southern pastures, and become gradually insusceptible. But in case of animals more than 12 to 18 months old the first attack might be fatal; and, perhaps, the simplest way of dealing with older cattle is to endeavour to induce immunity by exposing them to infection at some specified time in autumn. In the latitude of Washington it was found that the most convenient time is the middle of September. In more northerly latitudes the exposure should be correspondingly earlier. Cattle exposed in this way invariably take the fever, but the mortality is very small. Such animals may die of a second attack

during the succeeding summer, but a mild exposure during the following autumn may furnish a sufficient protection.

Another method of inducing the disease is the injection of blood from infected cattle, which generally induces—if practised after the hot summer weather—mild attacks of the disease. The blood of Southern cattle will serve the same purpose.

Exposure to ticks during the cool autumn months is also recommended, being simpler, requiring no operation of the ticks being easily procurable from the permanently-infected Southern territory.

In concluding their observations upon these methods of protection, the Reporters say that their statements concerning the possible uses of mild infections as a means of subsequent protection must be regarded as mere suggestions, which may or may not prove of practical utility on a large scale.

THE TICK. *Ixodes Bovis* (Riley).—This parasite was first described by Professsor C. V. Riley in 1868 as a reddish, coriaceous, flattened species, with body oblong-oval, contracted behind the middle, and with two longitudinal impressions above this contraction and three below it, more especially visible in the dried specimens. Head short and broad, not spined behind, with two deep round pits. Palpi and beak together unusually short, the palpi being slender. Labium short and broad, densely spined beneath. Mandibles smooth above, with terminal hooks. Thoracic shield distinct, one-third longer than wide, smooth and polished; coxæ not spined. Length of body 0·15 of an inch; width 0·09 of an inch. Further observations have made it clear that the above description probably applies to the adult male only; colour of the females being olive-brown on the back and slate-coloured on the belly. Dr. Cooper Curtice has shown that in the earlier or larval stage the young tick has three pairs of legs; after another week's sojourn on a calf (kept in an artificially heated stable, the season being advanced—November 15th), it was ready to moult. The emerging nymphal stage was provided with an additional pair of legs; after another week on the calf the tick was ready to moult again, and became sexually mature. It is thus shown that in this particular species of tick there are two periods of moulting before the parasite becomes mature. Curtice likewise created for it a new genus—*Boophilus*. It is classified by Dr. George Marx—Journ. Comp. Mecicine and Veterinary Archives—July, 1891, and January, 1892, as follows: Class *Arachinda*. Order, *acari*;

Sub-order, Cynohæsta; Family, Rhipistornidæ; Genus, Boophilus; Species, Bovis.

A full-grown tick is said to lay on an average about 2,100 eggs in from eight to fifteen days; the ticks which take the longer time lay the larger number of eggs. In hatching these eggs, in glass dishes, with damp soil or leaves, the dishes being kept close to prevent the escape of the young brood, it was found that the period of incubation varied according to the surrounding temperature. When the weather was very hot, the hatching was completed in from 15 to 18 days. When the season is more advanced, or the temperature lowered, the period of hatching is prolonged to 25, 30, or even 40 days.

Conclusions.—(1) Texas cattle fever is a disease of the blood, characterized by a destruction of red corpuscles. The symptoms are partly due to the anæmia produced, partly to the large amount of débris in the blood, which is excreted with difficulty, and which causes derangement of the organs occupied with its removal.

(2) The destruction of the red corpuscles is due to a micro-organism or micro-parasite which lives within them. It belongs to the protozoa and passes through several distinct phases in the blood.

(3) Cattle from the permanently infected territory, though otherwise healthy, carry the micro-parasite of Texas fever in their blood.

(4) Texas fever may be produced in susceptible cattle by the direct inoculation of blood containing the micro-parasite.

(5) Texas fever in nature is transmitted from cattle which come from the permanently infected territory to cattle outside of this territory by the cattle tic (*Boophilus bovis*).

(6) The infection is carried by the progeny of the ticks which matured on infected cattle, and is inoculated by them directly into the blood of susceptible cattle.

(7) Sick natives may be a source of infection (when ticks are present).

(8) Texas fever is more fatal to adult than to young cattle.

(9) Two mild attacks or one severe attack will probably prevent a subsequent fatal attack in every case.

(10) Sheep, rabbits, guinea-pigs, and pigeons are insusceptible to direct inoculation. (Other animals have not been tested.)

(11) In the diagnosis of Texas fever in the living animal, the blood should always be examined microscopically if possible.

The regulations of the American Department of Agriculture provide for the prevention of the introduction of the disease into non-infected territories by the complete isolation of all cattle from infected territories between March 1st and December 1st of each year; on the proper disinfection of the litter and manure from such cattle during transportation. Furthermore such cattle can only be transported into uninfected territories for immediate slaughter during the prescribed periods.

There are further directions in the report without the scope of this paper. The author may, however, state that the report, covering 126 pages of closely printed matter in addition to nine pages of illustrations, is a most valuable one, conducted with great care by Theobald Smith, Ph.B., M.D., and F. L. Kilborne, B.Agr., B.V.S., under the direction of Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, Washington, 1893.

FURTHER OBSERVATIONS ON ANTIVENENE, AND ON THE PRODUCTION OF IMMUNITY AGAINST SERPENTS' VENOM; WITH AN ACCOUNT OF THE ANTIDOTAL PROPERTIES OF THE BLOOD SERUM OF VENOMOUS SERPENTS.*

BY PROFESSOR FRASER, M.D., F.R.S.

[*Abstract.*]

AT the time when my former paper was communicated to the Society, I was engaged in investigating several subjects closely related to those dealt with in that paper, but in regard to which the experimental work had not advanced sufficiently to allow definite statements to be made.

I propose, to-night, to make some statements on these subjects.

Antivenene of Rabbits protected against fifty times the minimum-lethal dose.—A description has already been given of the steps by which protection against fifty times the minimum-lethal dose of cobra venom had been produced in rabbits. The antidotal power of the antivenene derived from these rabbits has now been examined. When this antivenene was mixed with twice the minimum-lethal dose of cobra venom and the mixture injected under the skin of a rabbit, it was found that recovery occurred if the dose of antivenene was ·7 c.c. or ·6 c.c., but that the animal died if the dose was ·5 c.c. or ·4 c.c. per kilogramme. As ·65 c.c. per kilogramme of the antivenene

* Read 15th July, 1895.

derived from rabbits which had last received thirty times the minimum-lethal dose is able to prevent death when mixed with the same lethal dose of venom, this result is an unexpected one. It appears to show that the blood-serum of a rabbit which had last received thirty times the minimum-lethal dose of venom is almost as powerful as an antidote as the blood-serum of a rabbit which had last received fifty times the minimum-lethal dose. If this be the case, it is suggested that for any given species of animal there is a maximum limit to the quantity of antivenene which can be produced or retained in the blood, and that, in the case of the rabbit, this maximum limit is reached when the dose is thirty times the minimum-lethal or even somewhat less. It is also suggested that this maximum limit is reached before the maximum protection of the animal which had last received fifty times the minimum-lethal dose will survive a larger subsequent dose of venom than an animal which had last received only thirty times the minimum-lethal dose. It is probable, therefore, that protection depends not only on the presence in the body of an antidotal substance, but also on a modification in the re-action of the tissues, produced by frequently repeated administrations, which lessen the susceptibility of the tissues to the injurious action of the venom.

Antivenene derived from the Horse.—Since my former communication, also, the blood-serum of the horse then referred to, has been examined. The process of protection had been begun in February with one-fifth the minimum-lethal dose, estimated from the results obtained in other herbivorous animals. This dose was repeated in seven days, and again in five days. One-third the estimated minimum-lethal dose was next administered, then, on two occasions, one-half, then three-fourths, and then the actual minimum-lethal dose. By successive increments, the subcutaneous injections were continued until fifteen times the minimum-lethal was administered, four months and a half after the protecting process had been commenced.

Distinct general disturbance, including a rise of temperature, was produced by the earlier doses. The later and larger doses, however, have produced almost no general reaction, although both the earlier and the later doses have caused considerable local effects, and, conspicuously, subcutaneous œdema and necrosis of portions of the skin.

Ten days after fifteen times the estimated minimum-lethal dose had been administered, blood was taken, with careful antiseptic precautions, from the left jugular vein, and a con-

siderable quantity of serum has thus been obtained. A small portion of this serum was preserved in the liquid state, but the greater part was dried *in vacuo* over sulphuric acid. It yielded 11·5 per cent. of solids in the form of a brittle substance, which was easily broken into bright, transparent, orange-yellow fragments.

The antidotal properties of this serum have been examined in two series of experiments. In the first, the serum, or antivenene, was mixed with cobra venom outside of the body; and in the second, cobra venom was injected thirty minutes before the serum.

In the former series of experiments, it was found that ·005 c.c., ·004 c.c., ·003 c.c., ·002 c.c., and ·001 c.c. per kilogramme were each sufficient to prevent death from somewhat more than a minimum-lethal dose of venom, but than ·0005 c.c. ($\frac{1}{2000}$) was insufficient.

As the antivenene obtained from protected rabbits which had last received 30 times the minimum-lethal dose failed to prevent death, in the same conditions of experiment, when its dose was ·0025 c.c. ($\frac{1}{400}$th of a c.c.), the antivenene obtained from the horse is about twice as powerful as an antidote as the antivenene of rabbits protected against 30 and even 50 times the minimum-lethal dose.

When given 30 minutes after the same lethal dose of venom, this serum, further, was able to prevent death when the quantity injected was only ·5 c.c. per kilo.

In considering these results it must be recollected that the minimum lethal dose of venom for horses has not yet been defined, and that no other data are available for forming an estimate than those derived from the determinations described in the former communication, which have been made in a few herbivorous animals. The dose last given to the horse may, therefore, have been considerably more than 15 times the minimum-lethal dose. On the other hand, it may be the case that the maximum production or retention of antivenene occurs in the horse and other herbivorous animals with 15 times the minimum-lethal dose, or, to use a chemical phrase, that with this dose the saturation-point of the blood has been reached.

Several interesting and practically important subjects for investigation are thus suggested, with regard to which information is likely to be obtained by an examination of the antivenene of the horse now undergoing protection, after the administration of the larger doses of venom which it is intended should be given.

Although it is certainly desirable that a still more powerful antivenene should be obtained, the antivenene already obtained is of sufficient antidotal power to be applied to the treatment of snake-bite in man; and I propose to send the greater part of it to India for this purpose.

For practical use, it is obvious that the antivenene in the dry state has advantages over a liquid preparation—in respect, for example, to portability, resistance to decomposition, and facility of subdivision into doses.

Some of these advantages are apparent when the specimens, now exhibited, of 15 c.c. of liquid antivenene are compared with the specimens of dry antivenene representing 15 c.c. of serum.

The facts which I had previously communicated to the Society show that the dry antivenene retains the original antidotal power of the liquid serum.

With this antivenene I have also made an experiment which illustrates its value when used as an antidote in actual practice, rather than when used merely for the purpose of defining its antidotal power in the rigidly adhered-to conditions of the experiments which have been described. ·5 c.c. per kilogramme having been found to be about the smallest quantity that can prevent death when given 30 minutes after rather more than the minimum-lethal dose of venom, this dose of venom was administered to a rabbit, and 30 minutes afterwards the insufficient dose of ·4 c.c. per kilogramme of antivenene. In three hours, the animal was lying extended with the head resting on the floor, limp and unable to stand; th respirations were infrequent and shallow; the cardiac action was feeble and irregular; and rattling sounds were being produced in the throat, from the excessive salivary and bronchial secretions always caused by toxic doses of cobra venom. A second dose, consisting of ·6 c.c. of antivenene, was now injected under the skin; and very soon a marked improvement occurred in the condition of the animal, the respirations becoming deeper, and the cardiac action stronger and more rapid, and without irregularity. An hour subsequently, a third dose of antivenene, consisting of ·5 c.c. per kilogramme, was injected, and further improvement was produced, so that all toxic symptoms soon disappeared, and the animal was restored to a nearly normal state, from which no relapse occurred until perfect recovery had become established.

(*To be continued.*)

Cases in Practice.

BY J. WALKER, NEW VETERINARY COLLEGE, EDINBURGH.

MULTIPLE PAPILLOMATA AFFECTING THE MOUTH OF A DOG.

A SIX-MONTHS-OLD collie pup was treated in June for warts in and about the mouth. They were of every size and shape, some the size of a pin's-head, some as big as a nut. On opening the mouth they were seen on the soft palate, and on the very back of the tongue; in these positions they were very small, while on the gums and on the skin outside the mouth they were larger and cauliflower-shaped. It is no exaggeration to say that there were dozens of them. As it was useless to attempt treating them locally, except so far as removing a few of the larger ones that interfered with mastication, the animal was put under a course of arsenic.

Fowler's solution was given in three-drop doses three times a day, and the dose increased to five drops. The treatment proved very successful. When last seen the warts had entirely disappeared from the inside of the mouth, and there were only a few outside.

STOMATITIS IN DOGS.

INFLAMMATION of the buccal mucous membrane is met with in the young of all animals, but it occurs with greatest frequency in the dog. Every lamb in a flock is sometimes affected, the disease being usually characterised by papules or vesicles on the mucous membrane of the mouth, and extending to the skin outside. It is usually a mild affection, and requires little treatment. Shepherds often use salt and brandy as a local remedy, but a solution of borax or chlorate of potash and glycerine forms a better application. In dogs, however, the inflammation is often more intense, so that there is not merely an infiltration between and below the epithelial cells with the formation of vesicles, but the deeper structures are involved, and then result patches of ulceration and loss of substance, not only within the mouth, but involving the skin round the oral cavity. Two cases recently treated at the College were typical of this condition. Both patients were young fox terriers. The mucous membrane of of the mouth was swollen and dark-coloured, and bled when handled. Scattered over its surface were raw patches, some livid, some yellowish-looking where the membrane was quite eroded. They were most numerous on the sides of the

tongue, and on the roof of the mouth. Outside, at the junction of the skin and mucous membrane and at both sides of the mouth, were raw granulating surfaces that looked as if pieces had been sliced away with a sharp knife. Saliva dribbled from the mouth and hung about the lips. The odour emitted was indescribably offensive. The treatment consisted of an aperient, and then bicarbonate of soda, and locally an electuary of borax, chlorate of potash, and honey. They both recovered in a fortnight.

PARACENTESIS ABDOMINIS IN THE DOG.

A YORKSHIRE terrier was brought to the College for treatment on May the 10th last. It was suffering from very pronounced ascites, walked with difficulty, but was cheerful and lively. Pulse 110, respiration 20 and shallow. It was treated with digitalis and acetate of potash, and had aperients of cream of tartar and jalap. As there was no improvement, tapping was resorted to. A wide bandage was put firmly round the belly, and as the animal lay on its side a trocar and canula was pushed into the abdomen, just in front of the sheath, through the linea alba, and nineteen ounces of fluid were withdrawn, the bandage being gradually tightened as the abdominal walls receded. The digitalis and acetate of potash were continued and the patient improved. Unfortunately, the owner took the dog away ten days after the operation, and an opportunity was not afforded of watching the progress of the case.

Proceedings of the Royal College of Veterinary Surgeons and Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

ON Tuesday, 2nd inst., a special meeting and a quarterly meeting of Council of the Royal College of Veterinary Surgeons, were held at Red Lion Square, Mr. W. Hunting presiding. There were present:—Professors Dewar and Edgar, McCall, McFadyean, Penberthy, Pritchard and Williams, General Sir Frederick FitzWygram, Messrs. Abson, Barrett, Beddard, Bower, J. A. W. Dollar, Elphick, Faulkner, Frazer, Kidd, Locke, Lawson, Mason, Mulvey, Peele, Trigger, Wragg, and Mr. Hill, secretary.

The SECRETARY read the notice convening the meeting, and stated that he had received a letter from Mr. Lambert, of Dublin, regretting his inability to attend.

Election of President and Vice Presidents.

The PRESIDENT (Mr. Hunting): Our first business is the election of a president, and as this year it is, I believe, to be unanimous, I shall take advantage of my position here to propose the name of Mr. James Simpson.

Professor WILLIAMS: I have great pleasure in seconding the motion.

Professor MCCALL: I have great pleasure in supporting the nomination of Mr. Simpson. I think we are all unanimously of opinion that he should be elected as our president.

Carried by acclamation.

Mr. W. HUNTING then vacated the Presidential chair which was taken by Mr. James Simpson.

The PRESIDENT (Mr. James Simpson) in acknowledging his election said:—Gentlemen, my first duty on taking this chair is a very pleasant one, viz., to thank you very heartily for the great honour which you have bestowed upon me. It is an honour which I value to-day, and I am sure I shall value it none the less towards the end of my life. My predecessors have invariably been good business men, and many have been eminent in our profession. I, however, can make no claim to be eminent, but only claim to be the possessor of ordinary business ability. Your choice, therefore, to-day leads me to believe that you have recognized long service. I have had the honour of sitting at this Board for more than ten years, and I can only hope, from the fact of your having elected me to-day, that I have, at any rate, brought common sense to bear in the exercise of the duties which every member of the Council is supposed to have. There is nothing on the professional horizon which looks likely to interfere with the smooth working of the Council during this year, and I think the large number of changes which have taken place within the last year leads us to think that, for the time at least, we may rest on our oars. I think we may fairly do so, and see how the changes which have been brought about within the last few years work. I ask you to accept my renewed thanks, and my assurance that during the year it will be my endeavour to conduct the business in a way that will be as convenient to you as I hope it will be beneficial to the Council.

Mr. WRAGG: I have great pleasure in moving a vote of thanks to our late President, Mr. W. Hunting, for the very able manner in which he has conducted the proceedings during his year of office. He has occupied that position with great honour to himself, and with very great advantage to the veterinary profession.

Mr. TRIGGER: I have great pleasure in seconding the vote of thanks so ably proposed by Mr. Wragg, and I feel that I have some little claim in so doing, having had the pleasure of knowing Mr. Hunting, I think, longer than anyone else in this room—certainly nearer 30 than 25 years. I have also watched his career in the chair with great pleasure, and I am glad to say that I can thoroughly indorse the remarks he so admirably made at the annual meeting. I do hope that instead of going in for other measures, we shall now settle down to making ourselves thorough masters of the work here before us. I have great pleasure in seconding the vote of thanks to Mr. Hunting for the able manner in which he has filled the post of president during the past year.

The motion was carried by acclamation.

Mr. HUNTING: Mr. President and gentlemen, I thank you very much for the kind way in which you have passed this vote of thanks to me, and I can assure you it is really more than I expected.

The PRESIDENT stated that the next business was to elect six vice-presidents.

On a ballot being taken the following gentlemen were declared to be elected:—Messrs. Hunting, Trigger, Wragg, Mason, Professor Penberthy, and Professor Edgar.

Election of Secretary.

On the motion of Professor WILLIAMS, seconded by Professor PENBERTHY, Mr. A. W. Hill was unanimously re-elected Secretary and Registrar for the ensuing year.

Professor W. O. Williams was elected as the Member of Council from those successful at the recent election, to fill the place of Professor Thomas Walley, deceased.

QUARTERLY MEETING.

Mr. James Simpson, President, in the chair.

On the motion of Mr. FRAZER, seconded by Mr. HARTLEY, the minutes of the last meeting of Council were taken as read and confirmed.

Correspondence.

The SECRETARY read the following letter from the Board of Agriculture:—

"Board of Agriculture,
"4, Whitehall Place, London, S.W.
"18*th June*, 1895.

"Sir,—I am desired by the Board of Agriculture to inform you that on many occasions it has been urged upon the Board that it would be a great assistance to local authorities in their efforts to stamp out contagious diseases of animals if veterinary surgeons were required to notify the existence of any contagious diseases of animals which may come under their observation. Quite recently the same subject has again been somewhat forcibly brought before the notice of the Board in connection with the working of the Glanders or Farcy Order of 1894, it being contended that unless notification of glanders is made compulsory upon veterinary surgeons, all attempts to stamp out that disease will be seriously impeded. In these circumstances I am directed by the Board to ask that the Council of the Royal College of Veterinary Surgeons will favour them with their views on the subject, and will say whether they would see any objection to the veterinary profession being placed with regard to contagious diseases of animals in a similar position to that occupied by the medical profession under the Infectious Diseases (Notification) Act, 1889, it being understood as in that case, that a small fee would be paid for the notification of the disease. The matter is one of considerable importance, and the Council readily understand that before expressing any opinion in favour of the proposal the Board would wish to satisfy themselves, through the instrumentality of your Council, that it would commend itself to the Veterinary profession generally.—I am, sir, your obedient servant,

"T. H. ELLIOTT, *Secretary.*"

Professor WILLIAMS: I would suggest that the Council express a desire that the Board of Agriculture should make every veterinary surgeon an inspector under the Contagious Diseases (Animals) Act; that every inspector be required to notify the outbreak of all contagious disease, and that he be paid an adequate fee for such notification.

Mr. BOWER seconded the proposal.

Mr. HUNTING: I forgot that I should not be in the chair when this matter came before the Council, and I wrote a draft reply to the Board of Agriculture, but did not send it. Personally, I think it would be the correct thing to follow the suit of the medical profession, on whom it has been made compulsory to notify all contagious diseases they see. I move, therefore, that we send a letter to the Board to that effect.

The PRESIDENT pointed out that the notification of disease by medical men was not compulsory except in those districts where the Act was adopted.

Professor MCFADYEAN seconded Mr. Hunting's proposition.

Mr. MULVEY: The subject of the letter that has been read from the Board of Agriculture is of so serious a character, as affecting veterinary surgeons, that I think it should not be put on one side at once, and I accordingly move that it be referred to a committee for consideration.

Mr. HARTLEY seconded this amendment.

Professor WILLIAMS asked leave to withdraw his proposition.

Professor DEWAR: I think that we should not take responsibility for the whole profession on this matter without giving it due consideration. I think it is apt to lead to friction between practitioners and clients, especially looking at the relation in which glanders is dealt with at the present time. I think the matter should receive every consideration before any proposition is resolved upon, and I beg to support Mr. Mulvey's amendment.

Mr. HUNTING: In lieu of my proposal, I will now move that the letter which I had drafted be sent by our Secretary to the Board of Agriculture. With the permission of the Council I will read it. It is as follows:—"Sir, I beg to say that I laid your letter before the Council of the Royal College of Veterinary Surgeons at their meeting on the 2nd inst. In reply, I am directed to say that the Council believe that compulsory notification by veterinary surgeons, similar to that required from the medical profession, would assist in the suppression of contagious diseases among animals. They see no objection to it, and believe that it would commend itself to the veterinary profession generally. I am also directed to add that the Council hope that the willing assistance, always given by the medical profession to the eradication of disease, may meet with more reciprocal return both from the Central and Local Authorities than has hitherto been the case. Every disease removed from the country necessarily reduces the remunerative employment of veterinary surgeons, and the hope of the profession that this loss would be balanced by a greater demand for their services as agents in preventive medicine has so far not been verified."

The PRESIDENT: You propose to substitute that for your resolution?

Mr. HUNTING: Yes.

Mr. Mulvey's amendment that the matter be referred to one of the standing committees was then put and carried; and it was agreed that the matter be referred to the General Purposes Committee when formed.

Letter from Professor McFadyean.

The SECRETARY read a letter from Professor McFadyean, dated June 22nd.

Professor MCFADYEAN: If I may be allowed I should like to explain what I refer to in my letter. There are some students under the three years' system who have just passed through their second, or B examinations, and some of them are so young that they would not be eligible for the C examination under the three years' system next May; at least one of these gentlemen, on my suggestion, is desirous of transferring himself to the students who are under the four years' system; that is to say he has passed his A and B now, and instead of presenting himself for the one examination under C and spending only one year more he is desirous of devoting two years further to the study of the final subjects, and to go up for the two examinations, namely, the C and D. examinations under the four years' system. It is a course which one could hardly have expected, but he is adopting the more difficult and costly one, and I did not anticipate the Council would raise any question as to it. I wish simply to ask the question publicly in order that I might, when this student becomes eligible, feel that I was doing no wrong in certifying him as eligible for the C examination under the four years' system.

Mr. MULVEY: I think it is quite competent for a student to transfer himself from one course to another, and I will accordingly move, "That this council sees no objection to students who have entered under the three years' course transferring themselves to the students under the four years' course for the C and D examination.

Mr. TRIGGER seconded the motion which was agreed to.

Presentations to the Library.

The SECRETARY announced the following presentations: A copy of his work on glanders by Mr. W. Hunting; the Quarterly Journal of the Veterinary Science in India; two bound volumes, 1883 and 1884, and unbound copies from 1882 to 1890, by Veterinary-Captain Smith.

On the motion of Mr. FAULKNER, seconded by Mr. MULVEY, a vote of thanks was accorded to the donors.

Finance Committee.

The SECRETARY read the report of the Finance Committee, which on the motion of Mr. LAWSON, seconded by Mr. MASON, was adopted.

Registration Committee.

The SECRETARY read the report of the Registration Committee, which with a slight verbal amendment was adopted, and the seal of the College was affixed to the various prosecutions.

Examination Committee.

The SECRETARY read the report which, on the motion of Mr. Hunting, was referred back to the Committee, for further consideration.

The various committees for the year were appointed.

Motion by Mr. Hunting—"Covering."

Mr. HUNTING: I do not think I need waste any time in explaining the motion standing in my name, because it was discussed at the last meeting, but will content myself with merely moving it, as follows:—"Any member of the Royal College of Veterinary Surgeons using or permitting to be used his title, degree, or description for the purpose of helping any non-registered person to practice veterinary medicine or surgery, or to sell medicines or appliances, shall be deemed to have committed an offence within the meaning of section 6 of the Veterinary Surgeons Act, 1881.

Mr. KIDD seconded the motion.

Mr. LOCKE: Are we to understand from this resolution that no veterinary surgeon can employ a non-qualified assistant.

Mr. HUNTING: Certainly not.

Mr. LOCKE: As I read this resolution no veterinary surgeon can employ an unqualified assistant without running the danger of committing an offence under Section 6.

Professor MCFADYEAN: When this was before the Council on a previous occasion I called attention to the fact that strictly speaking it forbids pupilage.

The PRESIDENT: When I gave notice of the resolution standing in my name I had no idea that I should occupy the position I do to-day, and it is just a question whether I should move it in opposition to Mr. Hunting. I thought Mr. Hunting's motion might, perhaps, be construed into a prohibition of employing unqualified assistants, or, as Professor McFadyean has pointed out, taking a pupil and allowing him to do anything. I considered, therefore, it was advisable to use the word "covering," and then the Council would have the power of putting their own interpretation upon what is and what is not "covering."

Mr. FAULKNER: Unfortunately, some of us were not present at the last meeting and did not hear Mr. Hunting's views with regard to his resolution. I may be wrong, but I take very much the same view as Mr. Locke. Suppose you have an unqualified assistant who is accustomed to dispense for you and sells things, such as colic draughts, and receives the money: I take it that he is working under the auspices and in the employment of a qualified member

of the profession, and I should like to know, if this motion is carried, whether that mode of doing business or practising in the profession would be prevented. The same remarks would apply to a pupil. I wish Mr. Hunting had given us his ideas, for no doubt they would have helped us in arriving at a conclusion.

Mr. HUNTING: Before the motion is put perhaps the President will allow me to reply, and then I shall be able to explain anything.

Professor PENBERTHY: Supposing a man is known to be practising veterinary medicine and surgery without a qualification, and a member of the College with a qualification comes in and unnerves a horse for him and allows the matter to go over to the unqualified man's client, as though he had unnerved the horse, I should like to ask Mr. Hunting if that would bring the qualified practitioner under this resolution.

Professor MCFADYEAN: I gather from some of the speakers that they object to the terms of this motion because it would make the employment of an unqualified assistant illegal. I suppose there would be no divergence of opinion if we were discussing the legality of an unqualified person doing a thing and taking pay for it, and I do not see that the principle is very different if a qualified veterinary surgeon employs him to perform an operation and he takes the pay for it. I think what we really have to consider is whether we shall adopt this motion or the one standing in the name of our President. I object to Mr. Hunting's motion, because I think it also forbids pupilage, which I should imagine we are all desirous of retaining. I suggest that he should amend the wording so as to declare that pupilage is not illegal.

Mr. TRIGGER: Though I am decidedly against a resolution which would prevent a general practitioner from employing an unqualified assistant, still I think this is certainly a question which will right itself in a very short time. We must remember that there are many men who have been occupying positions as unqualified assistants for 20 or 30 years, and if you pass a sweeping resolution you would be taking the bread from the mouths of those unfortunate men and throwing them on the union. Unqualified assistants are difficult to find to-day, except where they are old and valuable servants, and in a few years the engaging of an unqualified assistant will be almost an impossibility. I think, therefore, the Council must guard with very great care vested interests, no matter where they exist.

Mr. BARRETT: I regard this matter as a very important one, and I submit that a motion of this kind should not be carried by the Council, for, practically, if it is carried, a veterinary surgeon can neither have an unqualified assistant nor a pupil. I take it that this objection is not overruled by Mr. Simpson's motion. In my opinion a veterinary surgeon employing an unqualified assistant does cover him and protect him, by reason of his being in his employ. The same thing applies to pupilage. Both Mr. Hunting's and Mr. Simpson's motions are very serious ones, and in my opinion they should not be interfered with by this Council. In the event of this resolution being passed, veterinary surgeons in the country would have to discharge men who have, perhaps, been in their employment for several years. Though they are unqualified assistants they are deserving of consideration. It may be that it is from some misfortune that they have been unable to qualify, and now you ask us to throw them upon the world, irrespective of their past services and of the knowledge they have gained. It may also affect their wives and families, which would be very hard. I think a resolution of this kind ought not to be passed; but even if it is passed by the Council, it will never be carried out in the country. In order to meet the difficulty I would suggest the addition of these words at the end of Mr. Hunting's motion: "Except such non-registered person be in the service or pupilage of a member of the Royal College of Veterinary Surgeons." If that were inserted you would protect the unqualified

assistant and enable him to go on as before, and the same thing would apply to a pupil. If I am in order I will move that as an amendment.

Mr. FRASER: I will second that.

Professor EDGAR: I should like to point out that the law protects those gentlemen who are supposed to have had a vested interest for so many years, and no resolution that we can pass can over-ride it. Mr. Hunting definitely and advisedly says "any non-registered person." A man who has been acting as assistant to a veterinary surgeon for twenty years must of necessity be a registered practitioner. If he is not a registered practitioner, veterinary surgeons have to own themselves guilty of forcing upon the public men who attend their stock and animals—individuals whom this Council, through its examining body, say are unfit to be entrusted with the care of animals. We should be perpetrating a fraud upon the public. By bringing this motion forward Mr. Hunting will be protecting the public and doing them a great service. It is not our duty to protect unqualified men, or to force them upon the public as men fit to do work which only those who pass examinations should do.

Professor DEWAR: I respectfully submit to Mr. Faulkner and Professor Penberthy that it does not matter one bit what explanation Mr. Hunting gives of his motion, as it will stand on its own merit. I submit that the motion which stands in our President's name would leave the Council a certain liberty, as it were, to interpret the word "covering." I do not think, however, that it will generally be interpreted as Mr. Barrett interpreted it. I beg to move, as an amendment, the motion standing in Mr. Simpson's name, which is as follows:—"Any member of the Royal College of Veterinary Surgeons using, or permitting to be used, his title, degree, or description for the purpose of covering shall be deemed to have committed an offence within the meaning of Section 6 of the Veterinary Surgeons Act, 1881."

Mr. ABSON seconded the amendment.

Professor PRITCHARD: I am of opinion that none of these motions or amendments are necessary at all.

Mr. LAWSON: That, too, is my opinion.

The PRESIDENT: I should like to point out that our solicitor is desirous of having something passed which will give him the opportunity of advising us to prosecute in cases of "covering."

Mr. HUNTING: It is not my motion really—it is the solicitor's motion.

Mr. BOWER: I, for one, feel quite guilty upon this matter, being one of those who have a non-registered practitioner in my service as assistant. He is a very good man, having been at college for one session, but unfortunately he had not the chance of going there again. He has been with me for over 20 years, and of course does not profess to be more than an assistant. I know of others who are in the same position, and I suppose that if this motion is passed it means my getting rid of him.

Mr. HUNTING: Why did you not register him in 1881?

Mr. BOWER: I know I am to blame for that.

Mr. BARRETT: It is not part of your duty to register your assistant.

Mr. HUNTING, in reply, said, I should like to point out that apparently there is a misunderstanding about this altogether. By the Act of 1881 the Government has given us power to prevent unqualified practitioners from practising, but there are ways of evading that Act, one being by a qualified veterinary surgeon covering an unregistered man. Now there can be no worse offence than for a man in a profession to assist another to drive a hole through the Act of Parliament which protects them. The solicitor found that there was a difficulty in protecting the profession according to the law, and he drew this definition of covering. It is all very well to say that a man must not be guilty of covering, bnt the first time an action is brought against a man for

covering he would say "What do you mean by it," and then there might be the pleasure of having a discussion, perhaps for a day or two, to make out what "covering" is and what it is not. The solicitor went carefully through the Bye-Laws of the Royal College of Surgeons and the Royal College of Physicians to see what they had done, but those Acts not being alike he could not take the wording of the Regulations, and, therefore, he drew this as being the best legal definition that he could give of "covering," so as to enable us to protect ourselves from its evil effects. Now what has been said against it? Mr. Barrett tried to raise our sympathies by referring to the wives and families of men who had for 20 years been doing what they ought not to do, in other words, he would have us consider not an Act, our privileges, or public rights, but the wives and families of men who have been permitted to break the Act for 20 years. If they had only taken advantage of the Act of 1881 and been registered at the proper time we should have said nothing. That Act protects all these men.

Mr. BARRETT: I rise to a point of order. It is a matter of opinion whether a man does break the law.

Mr. HUNTING: That is not a point of order, it is an interruption. Professor Penberthy asked me also whether I could say that it was an act of covering for a veterinary surgeon to perform an operation for a man who was not registered. If he did it to help that man to get money, certainly he ought not to do it. It is an act of covering, and he ought to be punished. If, however, he did it for a man who had been in the habit of employing an unqualified man and was paid by the owner of the animal, I cannot say that there would be any harm in cutting out the unqualified man. Then it is said that this would interfere with men having pupils, and that it would interfere with "improvers." Doubtless it is only natural that school teachers and members of schools should object to our doing that. But we want to do nothing of the sort. It never entered into the solicitor's head, or mine, or anybody else's head connected with this matter that it would do so. The mere fact of a definition does not alter the Act or the law. The law now is as you find it. We are only trying to make the thing practical so that we can get at a man, and that he shall not be able to say, "You have not defined it, and you do not know what you are aiming at." If you like to take a very academic view of this resolution, and if the Council were all fools some day, it is possible that that Council might punish a man for having a pupil; but I cannot believe in such contingencies. I do not believe that the intelligence of this Council will ever stoop to that. Really, therefore, as far as I can see, the solicitor has drawn this resolution carefully and well. He tramples upon nobody's toes, and it further protects us according to the 1881 Act. Comparing it with the resolution which stands in Mr. Simpson's name, which has been proposed as an amendment by Professor Dewar, I may point out that we all think covering is illegal. We would all vote at once to punish a man for covering, but we do not know what covering is. The solicitor, therefore, has considered it necessary that we should say what covering is. This resolution attempts to do what Mr. Simpson's motion does not—it attempts to define what is "covering," and I say that that attempt does nobody any harm; on the contrary, it is calculated to clear away the difficulty, and do us all good. Then there was another brilliant idea of Mr. Barrett's. He wished to insert some such words as these —"Unless he be in the service of a veterinary surgeon." Naturally, he would always be in the service of a veterinary surgeon, and you supply him with the very argument, and make an excuse for him at once.

The PRESIDENT: We have before us Mr. Hunting's motion, which has been seconded by Mr. Kidd. Then there is an amendment proposed by Mr. Barrett, and seconded by Mr. Fraser, proposing to add these words to Mr. Hunting's resolution:—"Except such non-registered person be in the service

or pupilage of a member of the Royal College of Veterinary Surgeons." There is also an additional amendment proposed by Professor Dewar, and seconded by Mr. Simpson, in which he adopts my motion as follows:—"Any Member of the Royal College of Veterinary Surgeons using or permitting to be used his title, degree, or description for the purpose of covering shall be deemed to have committed an offence within the meaning of section 6 of the Veterinary Surgeons Act, 1881." I will put Mr. Barrett's amendment first.

Mr. BARRETT'S amendment was then put and lost; as was also Professor Dewar's amendment, nine voting for and 14 against.

The PRESIDENT: As these amendments are lost you are as you were. I will now call upon Mr. Hunting to move the next resolution.

Mr. HUNTING: The motion standing in my name is as follows:—"That the Council take into consideration the subject of a grant to The Worshipful Company of Farriers." Some three or four years ago this Council decided to stand in with two other bodies—The Worshipful Company of Farriers and the Royal Agricultural Society of England—to carry out a scheme of registration. Those three bodies have worked together, and are now carrying out that scheme. After a little difficulty and some hitches—some people might use stronger words about it—we have got that scheme into a fair working arrangement, and it is going on doing good work. Funds, however, are short. We, out of the three bodies, are the only one that has not subscribed. Now, it strikes me that this Council, and this profession, would not like to be in that invidious position much longer. I take it that you do not want this Council to do anything mean; and, even if you did think the Registration scheme was a bad one, you would contribute your mite, and then say you would have nothing more to do with the matter. But if you consider the scheme is a good one, and being properly carried out, I ask you to subscribe, and, by way of seeing what you will give, I suggest £50.

Mr. WRAGG seconded the motion.

Mr. BARRETT asked what amount the other bodies had subscribed.

Mr. HUNTING stated that the Royal Agricultural Society had subscribed 150 guineas; the Worshipful Company of Farriers, 250 guineas; and various private individuals sums ranging from £50 to £100.

Professor EDGAR expressed his surprise at the Council being asked to make such a grant, and thought that they would be voting away prematurely the funds of the College if Mr. Hunting's motion were adopted.

On the motion being put it was declared by the President to be carried, 8 voting for and 6 against.

The PRESIDENT moved the following resolution in his name, "That the name of Mr. Pettifer be restored to the Register, he having complied with the requirements of the Council."

Mr. HUNTING seconded the motion.

Mr. TRIGGER moved, as an amendment, that in view of the fact that certain indiscretions on the part of Mr. Pettifer had taken place the question of the restoration of his name to the Register be delayed until the October Meeting, to give Mr. Pettifer time to destroy all papers, so that no further mishaps might occur.

Professor MCCALL seconded the amendment, which after some discussion, was lost, and the original motion was carried, 7 voting for and 5 against.

Obituary List.

The SECRETARY read the obituary list, and on the motion of Mr. Mulvey, seconded by Mr. Wragg, it was resolved that a letter of condolence be sent to the family of the late Mr. Peter Taylor, who had for many years been a Member of Council.

On the motion of Professor Penberthy, seconded by Mr. Faulkner, a vote of thanks was passed to the President for his conduct in the chair.

THE CENTRAL VETERINARY MEDICAL SOCIETY.

(*Continued from page* 56.)

Now, I want to know if mallein has a selective power. Has it a selective power for glanders lesions anywhere, or only for those lesions in the lungs? If it has a selective power, what action has it upon the lesion itself? Does it advance the lesion, does it alter it in any way, does it increase its size, change its consistency, or in what way does it act? Then I should like to know if tuberculine or any other organic fluid would have a similar action on a glandered horse? I have a recollection of some experiments performed with tuberculine, perhaps not as a diagnostic agent for glanders, but in the treatment of glanders; and I believe the result was that the glandered horse reacted to tuberculine fairly well. It is usually maintained that mallein is harmless on non-glandered horses. I do not wish to deny the statement, but I am not aware of any experiments conducted to prove that mallein is harmless to non-glandered horses. Assuming that mallein is harmless, it would be worth while to know if mallein has any protective power on a non-glandered animal, because if it can protect from glanders, it would be better to malleinise a whole stud than to pick the horses out by degrees. If it were once established that a malleinised horse would resist glanders, then, of course, there would be a very great demand for the agent, and we should be really adopting a prophylactic medicine.

Next we come to suppression. I do not intend to enter into the question of legislation, or to discuss what the Government may or ought to do, what the London County Council should do but does not do. I wish simply to refer to what should be done—nay, what ought to be done—in a stable where a few glandered horses have been picked out by mallein or some other diagnostic means. In the light of recent research and of present knowledge regarding glanders, is disinfection of an infected stable essential or superfluous? That is the question. If we knew the radius of infection, the vitality of the virus, it might be found that disinfection is entirely superfluous; that once you remove the living animal no further harm can result in a stable until another glandered animal is introduced. It might be found that there was no occasion to destroy fodder, to burn litter, to whitewash, to scrub, to pick up, or set about the damaging process of disinfection, which is so unpopular. But we are in a predicament at the present time. We do not know what happens in an infected stable. Hence disinfection is practised, and carried out, and recommended, and certainly it is a good thing. It is a good thing to disinfect on the same principle as that which led an old Scotch farmer to regard Sunday as a Godsend because on that day his servants got washed. And I believe that this disinfection, even if it is unnecessary or superfluous in the after-treatment of glanders, is a good thing for the stable, particularly in London. Now, on that point I would like Professor McFadyean's opinion whether he thinks, from his own knowledge of the disease, it is necessary to pursue this elaborate disinfection of premises. And a further question arises from this: when does he consider that a stable is free from infection or fit for the reception of fresh healthy stock. According to the discoverer Loeffler, the glanders bacillus dies a natural death after four months, if left to itself; but according to Cadéac and Malet, it is practically uninfective in a much shorter time. But my point is: when is the stable in a fit state for the stafe introduction of a fresh stock of uninfected animals? I have given you a few questions, and I have probably suggested some points that may be taken up by other members of the Society; and if I have not re-opened the discussion to your satisfaction, I have tried to do my duty.

Mr. J. A. W. DOLLAR said: Mr. President and Gentlemen, my appearance here this evening with a few books seems to have raised such apprehensions

on the other side of the table, that I hasten to allay the honourable members' fears by at once disavowing my attention of speaking for long. One book I have here, however, happens to be specially appropriate on the present occasion because it enables me to correct the suggestion that Professor Nocard did not recognise the possibility of infection through the digestive tract before the summer of last year. A statement to this effect has just been made by the learned professor on my right (Professor Macqueen), and I will, therefore, read you a short extract from the lectures on contagious diseases delivered by Professor Nocard during the year 1891-92, which will show you that even at that time the professor recognised the possibility of transmission of disease by ingestion. "This is precisely"—he says—"the danger in country inns. A large number of animals pass through them. The diseased ones may leave the germs of contagion in mangers and buckets which serve for all strange animals. Now, one knows that the horses of hawkers, canal bargemen and so on are often glandered, and as they only pass a single night—as a rule—at the same inn, one diseased animal may infect a large number of places or even a whole district." Then, again, he says:—"Although the ingestion of infected food may be the most ordinary method of contagion, it is rare that one finds a glanders lesion in the intestinal mucous membrane," That, I think, sufficiently disposes of the point that Professor Nocard did not recognise the possibility of infection by ingestion. Then a statement was made that Babès experimented on horses with the object of discovering whether it was possible to infect them by rubbing glanderous material into the skin, but that experiment, as far as I am able to ascertain, was not made on horses but on guinea-pigs; and Professor Nocard alludes to it here [in a book produced] and suggests that infection really takes place through very small injuries in the skin or that after infection the animal either scratches the place or that it is wounded by pieces of straw or other material in its bed. These points, however, are quite beside the question to which I wish to address myself this evening, and which is a very important one, that, namely, of how infection usually takes place. Does it occur (as Professor McFadyean stated) through the respiratory tract or does it take place also and frequently through the digestive tract? In regard to this question it may be interesting to note what has been discovered in other diseases, and I should like to draw attention to the experiments of the Russian discoverer, Wyssokowitsch who found that the intact mucous membrane of the lungs resisted the entry of germs of typhoid fever, staphylococcus pyogenes and several other diseases, even when injected into the trachea. Arnold—an English discoverer—also addresses himself to this question. He found that particles of emery, ultramarine, or even of such finely divided material as smoke did not penetrate to the interior of the lung, although coarse particles were taken up by the mucous membrane of the alimentary tract. Therefore, I think, we have some ground for considering that the entry of organisms through the pulmonary mucous membrane directly into the substance of the lung is somewhat difficult. On the other hand Koch and Villemin tried certain experiments with tubercle bacilli which were more successful, but the conditions were of such a peculiar character that they could scarcely be compared with the processes normally occurring in cases of glanders. They took a number of white mice and subjected them for half-an-hour on three successive days to the vapour produced by spraying tubercle bacilli into a closed box. The animals in such cases succumbed, and it was discovered that the same results could be produced by directly injecting a solution containing the bacilli into the trachea. But a very singular fact came out during those experiments. Although it was found perfectly easy to produce tuberculosis, either by spraying this infective material into a box and causing animals to inhale it, or by direct injection into the trachea, yet dry powders did not impart disease.

Now, I take it, if the disease (glanders) is usually spread by inhalation it is spread by dry powder, and therefore the experiments of Koch and Villemin would rather tend to contradict the suggestion that glanders is usually spread in that way I think that this point really deserves somewhat careful consideration. We are usually told that an animal suffering from glanders distributes the infective material over the wall of the box and on the fittings around it, that the discharge gradually dries, then breaks up into an exceedingly fine powder, which is carried by draughts of air to the uninfected animal, and is gradually drawn in along with the air inhaled. At the outset the theory seems to me to be met with a rather serious difficulty, because Loeffler, the discoverer of the disease, found that glanders bacilli died in eight days when exposed to the air on silk threads; and he found further that in no instance did they resist desiccation longer than three months. Renant, Pouch, Galtier and others went further, and showed that desiccation at once destroyed the virus. Then, again, we must remember that the animal is provided with a very elaborate filtering apparatus, in the turbinated bones and upper air passages, which are excellently contrived for catching every particle of dust that enters the nose, and which are almost sufficient to clear the air of everything except the very finest particles before it enters the lungs. I therefore think that we have to deal with two initial difficulties. At any rate, we have to explain how this moist discharge dries without the bacilli dying, and how the horny material so produced breaks up and becomes converted into fine powder,—a thing that seems to me exceedingly difficult to contrive even by design. Then it appears most peculiar that so large a quantity enters the lungs, and that if infection takes place through mucous membranes, the quantity which must necessarily lodge on the turbinated bones and in the upper air passages does not produce lesions there more frequently. Even when this discharge reaches the lungs there is a further difficulty which presents itself, We naturally enquire where is the powder most likely to be deposited; and to find cases tending to explain this point we may turn to diseases like "miner's lung," in which large quantities of fine coal dust are regularly inhaled, or to the cases of lead workers and wool sorters where a similar thing occurs. In these instances it is found that the whole lung is not affected, but a particular portion only, that, namely, where the air current is least pronounced; the point, in fact, where the circulation is almost *nil*.

Mr. W. HUNTING said we may roughly divide Professor McFadyean's paper into two parts, one of a clinical and sanitary character, and the second of a bacteriological and histological nature. On the two latter sections I should not venture to express any opinion. What Professor McFadyean tells me I accept with simple faith. With regard to the clinical part we differ in some respects, and I shall endeavour to give reasons for my difference on points where we fail to agree. Before doing so, I should like to refer to a question of Professor Macqueen's as to whether glanders is increasing or decreasing. I take it that nobody disputes that the disease is decreasing, and that the decrease is due chiefly to the work of the private veterinary surgeon and the spread of general intelligence. Even in my early days (and my friend, Mr. Shaw, has, perhaps, a larger experience of the state of things that formerly existed than any man in this room), even, I say, in my early professional days of thirty years ago, there was at least ten times more glanders prevalent throughout the country than now, and perhaps three or four times more than at the present time in London. To my mind it is a far-fetched theory to account for the spread of glanders on the hypothesis of dried bacilli passing into the lungs with the air after escaping all the dangers lying in wait for them. It seems simpler and more direct to accept the explanation that infection takes place through the alimentary tract by the living bacillus passing direct from a diseased horse into the food or water of another. As to tuber-

culosis I am not inclined to allow that the analogy holds at all. I do not know that tuberculosis is nearly always the result of inhalation. I have no right to say that it is not but I do not believe it is, and I want some proof of it. But even if this be so, it is a different disease to glanders. To begin with, you argue that because you find lesions very constant in the lung and very seldom in the abdominal viscera that the lung is the primary seat of infection. You say that in tuberculosis there are always lesions at the point of entrance of the bacillus through the bowels or skin. I say in glanders there are not. (Professor McFadyean: I did not say that.) When I say "you" I mean everybody who takes that side of the question. Now, in glanders it is different. You have more or less permanent lesions left as the result of the blocking in a part of the tubercle bacilli. If you have a gland once affected with tubercle, it is more or less permanently affected. In glanders this is not so. Even the large gland under the jaw may be double its normal size and soon resume its normal condition, and twelve months afterwards you cannot find a single trace of local lesion. And the same with the bowels. It is possible that if you were to make a *post-mortem* examination very shortly after infection by food, you might find some lesion in bowel or mesentery; but I have never found those lesions. Schutz says he has, and I am not inclined to allow that Schutz is right because he is a foreigner. I want to find a man in England who has seen bowel or mesenteric lesions. Until I find them I shall doubt their existence, and believe that the distinguished bacteriologist found something which he recognised as glanders, but which was not glanders. If there are glanders lesions in the skin, such as farcy buds, which clear up, so may lesions through the bowels clear up. If we once acknowledge—as we do acknowledge—that with water and food glanders may enter into the body, and having entered locate itself in the lung, why should we seek for another explanation of infection because another disease, not exactly analogous, is said to infect through the air passages? Passing away from this question, I chiefly want to touch on the means of suppression; but there are two or three points which I should first like shortly to notice. As to the vitality of the bacillus I know very little, but I certainly believe that when it fails to reach the lungs it does not survive very long, even in the horse. I say that because I should expect, if the bacillus floated about in the blood or lymph-stream, we should more constantly get local lesion. We know that a horse may have glanders bacilli in his lungs for years and years without an outward sign of disease. I believe, therefore, that unless the glanders bacilli gets comfortably lodged in the lungs, it perishes rapidly. The majority of cases of glanders are non-infective until some external symptoms develop. It might almost be regarded as a local disease of the lung—a local disease, however, which may at any time become infective or general by the bacilli escaping and passing from the lungs by the blood and lymph-vessels over the whole body. As to the incubative period, I have never experimentally tried it, but the shortest period I have yet come across is one month from the time of infection, and in that case the horse had lesions in the lungs. Now, between the incubative period of the disease and the latent period. I have before tried to draw a distinction—and there ought to be a distinction. The incubative period, I take it, is the time from when the bacillus enters the body to the time when you find lesions anywhere in the body. The latent period I take to be simply the period in which an animal may be infected and yet show no external symptoms of infection. I suppose that Professor McFadyean will tell us that there is no latent period now that we have got mallein to indicate the existence of lesions. With regard to curability, Professor McFadyean answers the question "do cases of glanders ever end in recovery?" in the affirmative. And Professor Macqueen gives us some particular cases of recovery. Personally, I think I know two or three undoubted cases. As to farcy—if I may

distinguish between the two forms—I know some dozens of cases of recovery. I am not going to say that there is any particular practical value to be attached to the fact that occasionally horses recover from glanders. The fact has one important bearing on stamping out the disease for the public good. If you allow that glanders is curable then you have one of the strongest arguments in favour of fair compensation during the process of stamping out, otherwise you would be killing a horse every now and then that is curable ; and you have no right to do anything of the kind without paying compensation. With regard to "susceptibility," I do not believe a bit in the susceptibility of horses to glanders. I believe that the strongest and healthiest horse if he only gets the bacillus among his food (I don't know about the dry one in his air supply) will succumb to glanders, but it will be longer before he does succumb. I believe that the reason why glanders spreads more rapidly in stables where the horses are underfed, overworked and badly treated is simply this : You have under those conditions a much more rapid development of the disease—it more speedily reaches the stage at which it is most infective. In other words, as horsemen say, they "break up" more quickly. When you have more acute cases or more generalised disease the discharges from the body are more infectious, aod thus you have the disease spread very rapidly. With respect to diagnosis I will only say that I believe with Professor McFadyean that we have in mallein not only the best aid to diagnosis, but an instrument of diagnosis which is much more certain than any human being can possibly be. Mallein makes very few mistakes. It diagnoses cases which the cleverest and best observer cannot by any possibility diagnose. In 178 cases in which I have used mallein I have only seen three cases in which I failed to find any glanders lesions on the *post-mortem* examination. It may be in regard to the latter that I do not recognise the lesions, that I was unable to find them, or that they did not exist. I only state the fact that we could find nothing. I have never known mallein fail in detecting glanders when glanders was existent, so far as cases go in which I have seen the *post-mortem* examination.

As to means of suppression, mallein has, as Professor McFadyean states, removed our greatest difficulty ; but I cannot allow that it is so indispensable as he says. The Professor says : "Does anyone suppose that in studs of hundreds of horses in which the disease has prevailed for years, the disease can be exterminated by isolation or slaughter of animals chronically glandered?" Prof. McFadyean overlooks the fact that we have stamped out glanders in studs of hundreds of horses without mallein. In the British army there are 16,000 horses, and glanders was stamped out among them some years ago without the aid of mallein. I do not say that to lower the claims of mallein ; but I wish to point out that we were not absolutely useless before mallein was discovered. I believe myself that one of the great values of mallein, for some time to come, will be its use by the private practitioner, because authorities, local or central—the Board of Agriculture, for instance—are slow to accept anything new, or to do anything—well, they are slow. Individual effort has now a chance that it never had before. A man got tired of his veterinary surgeon, and of killing this and that animal, whilst year after year the disease decreased but remained. Now, if a veterinary surgeon gets hold of a sensible man—there are many of the other sort—he will allow him him to go through his stock with mallein. If he allows him to do this for a week or two, or a month or two, he will thus stop the spread of disease in a stud as you could not in any other way. Now, before expressing any views as to what I think should be the way in which the disease should be met, I want to take exception to two or three paragraphs of the essayist. He says : "If in any stud, however large, glanders continues to exist, the owner will have himself to blame." I am not going to dispute that as an abstract proposition, but I am going to object to it as a practical fair statement. I am going

to state that, under the circumstances, it is not right to impute blame to the horse-owner in London for having glanders in his stud. Everybody knows the extreme difficulty of getting rid of the disease, everybody knows how easy it is to have it re-introduced into a stud when once it is got rid of. Some of the cleanest and best-kept stables in London have suffered from glanders; and I unhesitatingly assert that there is no large stud in London that has ever remained wholly free from glanders for ten years. I myself have seen certain studs which have been reported to be free from glanders, and I know that the report was untrue.

Professor McFADYEAN: Not free from glanders for ten years?

Mr. HUNTING: Not for two, some of them. I know of no large stud clear for ten years. It is a man's misfortune to have glanders in his stud, not his fault.

Professor McFADYEAN: To get it.

Mr. HUNTING: It is his misfortune to get it and his misfortune to keep it. We will take an illustration. Suppose a widow left with 40 horses and a carrier's business. Suppose everything squared up and only a business connection and an infected stud left. You suggest that mallein should be used in her stable, and that if fifteen out of the forty horses react to mallein, they are to be killed. That would mean bankruptcy direct—absolute bankruptcy.

Professor McFADYEAN: I don't suggest it.

Mr. HUNTING: But I suggest it as being the logical outcome of your statement. She could probably avoid bankruptcy if she killed one or two of the horses occasionally. In that way it would take longer to stamp out the disease, but she would save her credit and not become bankrupt. The other plan means having a long purse indeed; it means such an interference with business as very few firms in London could stand. To kill 20 horses out of a stud of 100 horses, means upsetting that business, or the immediate purchase of 20 fresh horses, and you cannot buy 20 fresh horses whenever you like. I quite agree that if a man is in a position to stamp out all disease at one time, that would be the best thing in the end.

Professor McFADYEAN: I never advocated stamping out by slaughtering all the horses in a stable.

Mr. HUNTING: So far we agree. I believe very much myself in mallein a a valuable auxiliary. I believe, as Professor McFadyean says, that the great difficulty of stamping out of glanders has been that, without mallein, there were cases which could not be recognised; and so long as a case is unrecognised, it is extremely risky to wait for the development of symptoms. There are many cases where a glandered horse remains in the stable for months without infecting another horse. It is not at all uncommon to have five or six glandered horses in a hundred stall stable, and then no more. Professor McFadyean suggests that there should be a law prohibiting anyone from selling a horse from an infected stable unless all the horses had first been tested with mallein. The effect of that would be this: when you had cornered one or two men in that way, no owner would report a case of glanders. An owner would say, "I am not going to be had again like that, have my business interfered with and every horse tested with mallein simply because I reported. If I do not report, probably the existence of the disease in my stable will not be known; and, if the worst comes to the worst, I had better pay a fine of £20 for keeping my secret, than have my business upset." I have come across a strong supporter in this belief in the writer of a valuable article for farmers which appeared in the Royal Agricultural Society's Journal—I mean Professor Brown. Speaking of mallein he says: "Owners of horses will not be disposed to give notice of disease, still less to submit animals to mallein, unless they are sure of compensation." I agree with Professor Brown. It would pay horse-owners far

better to test the whole of their horses with mallein, and sell the dubious ones to their neighbours after the swelling had subsided. So long as the law does not prevent them doing that, and so long as no fair compensation is given, I fancy that individuals will use mallein to get rid of glanders, adopting the quicker, cheaper, and safer process of clearing himself by waiting until the swelling goes down, and then selling the infected animals. Would it not be better for the authority—local or central—to make some such voluntary arrangement with him as this: to say to him "knowing you have a case of glanders, if you will allow us to go through the whole of your stud and see which are affected, we will accept the reaction of mallein as indicative, and knock on the head every horse we find to be glandered. If we should make a mistake we will pay the full value for the animals not glandered, while for those which are glandered we will pay one-fourth the value." In that way you will induce men to report, in that way you would have perfect control and perfect command of the stable and not at a very great cost in the end. Of course such a plan would entail a heavy expenditure for two years, but would be found an economical as well as a speedy and an effective remedy for the existing evil.

Mr. SINGLETON: Considering the lateness of the hour and in view of a long journey homewards, I beg to propose that this discussion be adjourned to our next meeting; and I do so in perfect cognizance of the unfortunate conditions imposed upon one who moves such a resolution.

Mr. BUTTERS: I have great pleasure in seconding the motion.

The CHAIRMAN: May I ask Professor McFadyean whether he can make it convenient to come to our next meeting on May 2nd.

Professor MCFADYEAN: Unless something quite unforseen transpires to prevent me, I shall certainly come; I may say that I should come even to a continued discussion with pleasure.

MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

A QUARTERLY meeting of the members of this Association was held on Friday, May 10th, at the White Hart Hotel, Burton-on-Trent, the President, Mr. G. Wartnaby, occupying the chair. There were also present Messrs. J. J. Burchnall, Loughborough; F. J. Gooch, Stamford; H. M. Stanley, A. L. Gibson, John Blakeway, Birmingham; T. Slipper, H. Olver, Tamworth; E. G. Crowhurst, Leemington; J. R. Green, Alfreton; M. Sadler, Burton-on-Trent; H. J. Dawes, hon. sec., West Bromwich; and W. S. Carless, Worcester. Visitors: Messrs. E. R. Edwards and Rev. W. F. Drury.

Letters and telegrams of apology for non-attendance were read from the following: Professors Pritchard, Williams, Macqueen, Penberthy, Sir H. J. Simpson, Dr. Fleming, Messrs. Aris, Bailey, Brooks, Merrick, Malcolm, Captain Russell, Bambridge, Mason, and others.

Nomination of Members.

Mr. GOOCH gave notice that at the next meeting of the Association he should propose as a member Mr. H. Kidd, of Melton Mowbray, successor to one of their old members, the late Mr. H. J. Goodall.

The National Veterinary Association.

The HON. SECRETARY (Mr. H. J. Dawes) read a letter from the Provisional Committee appointed for the reception in Birmingham next July of the members of the National Veterinary Medical Association on the occasion of their annual meeting, asking this Association what they were desirous of doing in the matter of entertaining the visitors to the National gathering.

Mr. JOHN BLAKEWAY, acting on behalf of the Provisional Committee, explained the position of affairs, and suggested that a small committee be formed by this Association to take the matter up. He thought it was hardly fair to ask the members of the Provisional Committee to make up all the expenses out of their own pockets. The Midland Association had a certain amount of money at their backs, and they might set apart a certain sum for the entertainment of the National visitors.

The HON. SECRETARY thought they could not vote money for any purpose of which mention was not made upon the agenda.

Mr. OLVER moved that when the National Association have settled their programme, the officers of this Association send a circular to each member asking if they were prepared to subscribe individually to a fund, or support a resolution that the expenses come out of the funds of this Association.

Mr. W. S. CARLESS seconded.

Mr. BLAKEWAY, in answer to a question, said it had been proposed, although nothing definite was yet arranged, that on the third day a picnic or something of the kind be arranged.

Mr. GOOCH thought the third day would be a failure, as few visitors would stay after the second day.

Mr. STANLEY, who was of the same opinion as the previous speaker, moved that this Association be empowered to invite visitors to the dinner to be given on the first day.

Mr. OLVER suggested that the two resolutions be coupled, which was agreed to, and they were unanimously passed.

At a later stage of the meeting, upon it being pointed out that there was little time to be wasted in regard to the matter, the following resolution, proposed by Mr. Stanley and seconded by Mr. Blakeway, was also carried:—"That the officers of this Association form a committee, with power to act, for the purpose of making the necessary arrangements."

Candidates for the Council.

The HON. SECRETARY (Mr. H. J. Dawes) read a letter from the Lancashire Association, asking for the support of this Association in respect of the candidature of Mr. Samuel Locke, M.R.C.V.S., whom they were nominating for a seat upon the Council of the College.

Mr. CROWHURST thought this Association ought to have a candidate of their own, and he moved that Mr. Beddard be nominated in their interests.

Mr. OLVER seconded.

Mr. GREEN said he had been privately asked by several friends to allow himself to be nominated, but he certainly should not run in opposition to their friend and fellow member, Mr. Beddard.

Mr. Beddard's nomination having been unanimously agreed to, it was further resolved, on the motion of Mr. CROWHURST, seconded by Mr. GREEN, that the Hon. Secretary be instructed to write to the Lancashire Association, saying that this Association were anxious to run one of their own members for the Council, but that any support which could be given to them outside that would be cheerfully rendered.

Votes of Condolence.

The PRESIDENT said it was his painful duty to remind them that since their last meeting this Association had lost two valued members in Mr. Greaves, of Manchester, and Mr. Goodall, of Melton Mowbray. The late Mr. Greaves was one of the oldest members of the profession, and his face had been a familiar one for many years past. He was always ready to devote both time and money to the welfare of the profession. It was chiefly due to him that the Veterinary Benevolent and Friendly Society was put upon its legs, and

his death would create a loss which they would all feel. With regard to Mr. Goodall, he was a gentleman enjoying as wide a reputation as anyone practising at the present day. His genial smile made it a pleasure to meet him, and his removal would also be a source of sincere regret. He (the President) begged to move that letters of condolence and sympathy be sent to the families of those two gentlemen in their sad bereavement.

Mr. GOOCH seconded.

Mr. OLVER, in supporting, said it had been his privilege to know Mr. Greaves for 25 years, and he was held in the highest esteem by all with whom he was acquainted. He also agreed with what the President had said concerning the late Mr. Goodall, who was an able man and a kind friend, and one whom they could ill afford to lose.

Mr. CROWHURST, who was an old College chum of the late Mr. Goodall, having added a few words, the resolution was carried *sub silentio.*

Appointment of Auditors.

The TREASURER (Mr. J. Blakeway) moved, in accordance with notice duly given at the preceding meeting, "That rule 2 be so altered as to admit of the appointment of an official auditor or auditors." He had previously pointed out the necessity for the appointment of such gentlemen.

Mr. CROWHURST seconded.

The PRESIDENT said that personally he thought there was no necessity for auditors, but in deference to Mr. Blakeway, he should not object to their appointment.

The resolution was carried *nem. con.*

Mr. BLAKEWAY then moved, and Mr. GOOCH seconded, that Messrs. Stanley and Olver be the auditors until the end of the present financial year, which was likewise agreed to.

PRESIDENTIAL ADDRESS, BY G. WARTNABY.

Gentlemen,—I beg first of all to thank you for having elected me to the honourable position I occupy to-day as President of this important Association, and to assure you I appreciate most fully the honour conferred upon me. Your kindness in the past encourages me to look with confidence to your support in the future, which can alone enable me to fulfil the duties of my position. If, at the close of my year of office, I am able to feel I have in any way, however small, been of service to this Association, whose interests I have so much at heart, it will be a source of great pleasure and satisfaction to me.

Associations such as ours are excellent institutions. They have already worked changes which are highly beneficial to the members in many ways, promoting that social intercourse and good fellowship which undoubtedly, until these associations were formed, we as a body greatly lacked, and I would venture to think we benefit not only ourselves, but also the general public whose servants we are.

I am quite sure every man who intends to keep abreast with the times, and by so doing do his best for those who employ him, ought to join without delay. He will find his membership of great service to him in every way, as I can testify from my personal experience.

I should like here just to say a word to our younger members. We have in them, I am sure, excellent material, and I should wish to hear them take a prominent part in our discussions, and I take this opportunity of asking them, as a personal favour, to let us have the benefit of their views a little oftener in the future.

It is usual, and I think useful, on occasions like the present, to take a cursory glance at the general aspect of the profession. I do not intend,

however, to try your patience with a lengthy address, especially as my friend, Mr. Green, is to follow me with what I am sure will be an interesting and instructive paper.

I consider the whole profession has good reason to congratulate themselves on the composition of the Council. With such good men in power we must as a body advance. With regard to the educational branch of the profession our Council has done excellent work. At no time have we been better represented, or have we had men more able and willing to work for the general good, though often at the sacrifice of both time and money to themselves.

In extending the curriculum we are, I think, moving in the right direction; it will no doubt tend to raise the status of the profession, which is very good, very desirable, and is I am sure a subject for congratulation to us all, but the danger we have to guard against is this, lest this advance in theoretical education is at the expense of that practical knowledge without such no man, certainly no country practitioner, can hope to succeed.

It would be a great advantage to students if the teaching staff could see their way to set them free earlier in the year. April and May are by far the most important months so far as parturition and castration are concerned, and a young man who leaves college without having the opportunity afforded him of gaining a practical knowledge of a most important branch of his profession (no matter what his theoretical attainments may be), starts in life most unfairly handicapped, for it is just these cases, and I especially allude to difficult parturition—where if the young practitioner fails, as fail he most certainly will if he is without practical experience—a quack steps in, and with a skill born of long practice is able to bring the case to a successful issue. One such case as this I have quoted is enough to blight the prospects of the most promising young practitioner, the news spreads from market far and wide, and will take years to live down—on the other hand, I have often heard men say that their success dated from a difficult case of this kind, which they were able to bring to a successful termination.

In passing I would like to touch on three comparatively recent discoveries which ought, and no doubt will, have a most important influence on the profession. I refer to anti-toxin, mallein, and tuberculin.

Anti-toxin is likely to prove of incalculable benefit not only in reducing the mortality from diphtheria, that scourge of our infantile population, but tetanus appears to be also amenable to its action. (Though what the analogy between diphtheria and tetanus may be, I am unable to say). I know of two cases of tetanus which have recovered apparently under this treatment, and for my own part I think we may look with confidence for still greater discoveries in this direction and may reasonably hope that the mortality from diseases common to the human subject as well as to the animal, and which have hitherto defied the most skilful treatment, may in the near future be reduced to a minimum.

Mallein as a diagnostic agent ought to be turned to a better account, for in glanders we have a most fatal disease, attacking the horse and communicable to man, which might be stamped out, I believe, at less cost to the country than any other contagious disease taken in hand by our government up to the present time, if full advantage of the mallein test were taken.

Tuberculiu, like mallein, is at present but little used, and yet it is no doubt the most valuable means of diagnosing tuberculosis we at present possess. What an inestimable benefit would be conferred on the community at large if the Government would attack by its aid the milk alone, making the sale of that taken from tuberculous cows a penal offence; and by so doing, we should remove the chief source of danger, as milk is the principal food of young children. With the aid of tuberculin, under proper veterinary supervision,

I think that in three years time the number of tuberculous beasts would be enormously reduced. Owners would find that they were serving their own interests in ridding their herds of diseased animals; nor do I think in so doing there would be much actual loss, as the milk after boiling could be utilised in many other ways. Besides, if the Government eventually decided to stamp out tuberculosis by slaughter, the weeding out process which appears to be certain to follow the testing of milk would reduce to a comparatively simple matter what now appears a gigantic undertaking.

The grants made by our various societies in aid of the Institute of Preventive Medicine should, I think, meet with our cordial approval. I think it desirable that any invitation to join hands with the sister profession should be welcomed by us; there are many ways in which we could assist each other, notably in the inspection of meat.

I feel I must now mention a matter which is, I am sorry to say, not creditable to us as a body, I mean the professional evidence too often given in courts of law. We must many of us blush, inwardly if not outwardly, on reading these reports, and, gentlemen, this ought not to be; it is, I am sure, a state of things we of this Association earnestly deplore; we should lose no opportunity of protesting against a scandal that must inevitably lower us in the public esteem. It is, I fear, greatly due to a want of really honourable feeling amongst us, a want which I trust and think a higher standard of education will do much to supply.

Turning now to a more agreeable subject—even within my own recollection the *locus standi* of our profession has made vast strides. We have had the assistance of men whose exceptional ability and good fortune have placed them in a position above their fellows, and I wish here especially to mention the name of Dr. Geo. Fleming. No man has done more than he to raise us in the social scale, and when we most needed it; no other man, single-handed, at that time was able to do so much. There are others, too, whom I could name who have also done good service, and I am sure the whole profession, one and all, owes them a debt of gratitude which we shall do well to remember. We ought, I think, to feel the obligation to these men the more binding on us because there are others who in their different positions might, had their sense of duty equalled their opportunities, have done even more.

Our position to-day with regard to the Board of Agriculture is in an eminently unsatisfactory condition. A layman at the head of a department which can only be filled adequately by a veterinary surgeon (call that department by what name they will) is not only an insult to the whole veterinary profession but a mistake which will seriously affect the stock-owners of the country.

Against this gross injustice we have, through our Council, formally protested; but that is not enough. It is the duty of every one of us to do what we can individually to alter the present state of things.

For the Government to take shelter in the statement that the services of Professor Brown have been retained at the Board of Agriculture as consulting veterinary surgeon, at a salary of £300 a year, is either making a stalking-horse of Professor Brown, or else he, in accepting this post at such a reduced salary, is consulting neither his own dignity or the interests of his professional brethren.

Now, gentlemen, has not the time arrived when we should by combination do something to help ourselves? Let us live up to our excellent motto. Let us *unite*, and as a body *prove* that the veterinary profession is a factor that will in future have to be reckoned with before questions of vital importance to us can be settled.

I am extremely anxious, if you agree with me, that during my year of office a movement should be set on foot by this association, the object of which

shall be to send representatives from every one of our societies to form one great union, having power to deal with all important questions, every member being pledged to support his representative, and even to withhold our services where such a course is deemed necessary.

This, gentlemen, is, of course, only a bare outline of what I wish to see done in this direction, but I hope we shall go more fully into the matter at a future meeting.

"The Action and Value of the Anodynes and Purgatives used in Diseases of the Stomach and Intestines of the Horse." By J. R. Green, F.R.C.V.S., Alfreton.

Mr. President and Gentlemen,—When asked by my friend, our worthy President, to read a paper at this meeting, I had some little hesitation before accepting his invitation. In the first place I knew that amongst the older members of this association there were many who were better qualified, both by age and practical experience, to bring matters of interest before this meeting than I was, and secondly, I was painfully aware of my own shortcomings in that direction. Among the older members I may be thought to have a great amount of presumption in giving my opinion upon a subject which has probably engaged their attention for a number of years, and upon which even now they do not feel justified in making any bold assertions, but that is just the reason for my having chosen a subject so much open to discussion and debate. I am, to put it plainly, a seeker after further knowledge, and I do hope that in the discussion to follow I may greatly benefit by the opinions expressed by those whose experience is so much greater than my own.

Of the various diseases to which the horse is subject, there are none more common than those of the stomach and intestines, and in no instance is the use of medicines so much abused as in the treatment of these affections, "rule of thumb," or orthodox treatment, frequently being adopted without proper consideration of the cause and nature of the attack on the one hand, and of the therapeutic action of the agents on the other. The various purgatives and anodyne agents are often administered without discrimination, and unfavourable results of necessity follow. There are cases in which some hesitation would be shown before giving an aloetic purgative, if the action of such was properly understood, and some other means of emptying the bowels would be resorted to, and opium, the great sheet anchor of some, would be used with more caution than it is.

I intend in this paper to confine myself principally to therapeutic action of the different medicinal agents; but whilst referring to their use in their treatment of the various affections hereafter named, it will also be necessary to casually refer to the causes and symptoms of those diseases. The derangement of these organs are many, and vary much in nature and character, but I propose chiefly to refer to those in which the principal features are perverted action, obstruction, and pain in the adult animal. In the horse the stomach is, perhaps, less liable to disease or functional derangements than in the case of ruminants, owing, in the first place, to the simplicity of the organs, and, secondly, to the fact that only a portion of the work of digestion is thrown upon it, the other part of the process, along with assimilation and absorption, taking place in the intestines, but, nevertheless, we do get a large number of stomach cases.

The diseases of the stomach most frequently met with are simple indigestion, and impaction with distention, and gastritis. The principal bowel affections are: constipation, colic, impaction and obstruction (such as volvulus, intussusception, hernia, calculi, and parasites), and enteritis.

The inferences to be drawn and the opinions given in this article are based

chiefly upon observations and facts in connection with cases that have at different times come under my notice, but extracts from the records of others, or from text books, will be duly acknowledged.

The number of medicinal agents that come under the respective heads of anodynes and purgatives is large, but it is impossible to properly estimate the value of any one of them merely by its exhibition in one or two cases, and the opinions that I am about to venture, upon the efficacy of the different drugs employed, are given after repeated trials and carefully noted results.

The word therapeutic signifies the use of medicines in the treatment of diseases, and I take it that therapeutic action and value have different meanings. The first indicates the action of medicines upon the various organs of the body in disease, whilst the second is only to be estimated by the results of its use in a number of similar cases.

There are two classes of agents requisite in the treatment of abdominal affections, viz.:—Those which alleviate pain, and others which promote a proper action of the bowels. Those agents which subdue pain, either in a direct or indirect manner, are classed under various heads, viz.: anodynes or analgesics, narcotics, sedatives, anti-spasmodics, and hypnotics; and those which promote secretion and excretion are: laxatives, cholagogues, cathartics (purgatives) stimulants of musular fibre. In the first list may be placed opium, morphia, atropine, cannabis indica, ether, turpentine, chloral hydrate, aconite and chlorodyne; whilst the purgatives are: ol. lini, ol. ricini, aloes, aloin, croton oil, calomel, physostigmine, pilocarpine, and magnesium and sodium sulphates. It will thus be seen that we have at our disposal a great number of agents, but as they greatly differ in action a certain amount of discrimination is necessary in their use. For what may be used with beneficial results in one case may be detrimental in another.

Anodynes and analgesics relieve pain by diminishing excitability of nerves or nerve centres.

Opium.

The foremost in use is undoubtedly opium, or its alkaloid morphia, and there is no doubt in some cases its effects are beneficial, but that there are conditions in which it acts antagonistically cannot be denied. Medicinal doses are: anodyne, anti-spasmodic, they diminish congestion, relieve inflammation, lessen intestinal secretion and peristalsis, and sometimes cause sleep. In the horse the administration of opium is, in the first place followed by a period of excitement, and well-bred horses are not so easily brought under its influence. It is on account of the tendency to diminish secretions and peristalsis that opium acts as an antagonist to the action of whatever purgative has been administered; its use too frequently induces great nausea. I cannot say much in its favour in colic or impaction, but I have found its effects best manifested in enteritis and peritonitis, and in those cases which are characterised by severe and continuous pain with symptoms of inflammation, and where there is purging.

The alkaloid morphia is a most useful and valuable agent either to substitute for opium or to give when the drug itself is not admissible. It is quicker in action, handier to use, and, if a full dose be given, neither the preliminary excitement or nauseating effects are so marked as with opium itself. The preparations for hypodermic use are:—hydrochlorate and acetate, and doses varying from 2 to 4 grains are prescribed. In painful abdominal affections I am in favour of giving large doses at the onset if it is to be given at all. The addition of atropine in 1 or 2 grain doses of the sulphate increases the anodyne effect of the morphia and tends to excite peristalsis.

(*To be continued.*)

SCOTTISH METROPOLITAN VETERINARY MEDICAL SOCIETY.

THE annual summer meeting of the above Society was held in the King's Arms Hotel, Berwick-on-Tweed, on Saturday, 6th July. The President of the Society, Mr. John Cameron, Berwick, presided, and before the meeting proper took place entertained the members present to a splendid luncheon. Among the company were :—Principal Williams, New Veterinary College, Edinburgh; Mr. Peter Moir, Secretary, Edinburgh; Mr. Clement Stephenson, Newcastle; Mr. Hutton, Kelso; Mr. Lothian, Duns; Mr. Connochie, jun., Ayton; Mr. Milne, East Linton; Mr. Young, *North British Agriculturist.*

The PRESIDENT occupied the chair at the meeting, and called upon the Secretary to read the minutes of the previous meeting, which were unanimously adopted.

The SECRETARY then intimated apologies for absence from Professor McCall, Glasgow; Professor W. Owen Williams; Mr. Brydon, Newcastle; Mr. Rutherford, Edinburgh; Mr. David Dudgeon, Sunderland; Mr. Andrew Hutchison, Beechwood, Perth; Mr. McLachlan Young, and Mr. Awde, Stockton-on-Tees. He likewise intimated receipt of a letter of some importance from Mr. Rutherford, which was as follows :—

EDINBURGH.

DEAR MR. MOIR,—Had it been convenient for me to be at the Berwick meeting to-morrow, I would have asked for an expression of the opinion of those present on the growing, and I think very discreditable practice of solicitation by members of our profession. I endeavoured to get some expression of opinion at the last annual meeting of the Royal College of Veterinary Surgeons, but the President to my mind, rather fenced with than replied to what I said, and as no other person took the matter up, I am just afraid the subject is, if anything, rather delicate. Nevertheless, the question must not be burked, and I do think those of us who can honestly do so, should not hesitate to speak out. The practice is most contemptible, and I rather think under some circumstances, it is, from a professional point of view, disgraceful. What rubbish it is for a member of our profession talking of levelling ourselves up to the medical and some other professions while this, and one or two other and kindred practices are so common that the very public sneer at us on their account. I understand Mr. Cameron is to deal with tuberculosis. Might I draw the attention of the members to the desirability clamantly existing for all dairy cows being adequately tested for the presence or otherwise of this horrible disease? This, of course, is in the interest of public health. I believe something of the kind is being done in some countries; nowhere is it more necessary than here, and I do hope that our profession will take its place in a work which is surely of the near future. It is a great disappointment to me not being present with you. My business for to-morrow cannot, however, be put aside. I hope your meeting will be a most successful one, and I shall look forward to the published account of it with probably more than usual interest.—Yours very truly,

R. RUTHERFORD.

The Secretary further intimated the absence of Mr. Boyd, Melrose; and regretted neither of the clinical papers promised by that gentleman and Mr. Rutherford would be read, owing to their absence.

New Members.

The SECRETARY moved that Professor W. R. McDougall, B.Sc. of Edinburgh University, be a member of the Society.

Mr. HUTTON seconded.—Agreed.

Mr. CONNOCHIE proposed Mr. Milne, Ladykirk.

The SECRETARY seconded.—Agreed.

Condolence.

The SECRETARY intimated answers to letters of condolence, through death of members, from Mrs. E. Walley, widow of Principal Walley, and the sisters of the late Professor Lewis. He (the Secretary) moved that these replies be recorded in the minutes.

The Board of Agriculture.

The SECRETARY said he was also asked to write to the Royal College of

Veterinary Surgeons with reference to the letter received by this Society from the Central Veterinary Medical Society, touching the Board of Agriculture, and the changes that had been made in that Board connected with the veterinary profession, which were considered as very detrimental to the profession. He wrote to the Council of the Royal College of Veterinary Surgeons, stating that the action taken by that Society met with the unanimous approval of the members of the Society. Of course, they all knew that so far they had done their best, but had had no success.

The PRESIDENT said he supposed Mr. Moir had done everything possible with reference to these subjects. He suggested that the first half of Mr. Rutherford's letter be taken first, and the second could come on later.

Professor WILLIAMS said as far as he was concerned he only endorsed what had been said by Mr. Rutherford, and lately the status of the profession and its respectability in Edinburgh had been very much endangered by solicitation by men who really ought not to do such a thing. He had been in Edinburgh for 28 years, and it was only during the last two or three months there had been anything of the kind. Now, it was an everyday occurrence, and he thought a Society like that should take into consideration that this sort of conduct was not conducive to their elevation, and should express their opinion regarding it. It became harder now for a veterinary surgeon to make a living, and that might be used as an excuse for canvassing. He saw it recorded in that day's *Record* where a fellow of the Royal College of Veterinary Surgeons, and also a member of the Council, was advertising. That was not the first example of the kind, and, although he believed it was done for a good purpose, he felt that they were over-stepping their limits, and committing breaches of the law of etiquette every day of the week. He thought they should express their disapproval of advertising in the newspapers, and soliciting other people's clients. All the time he had been in Edinburgh he never had occasion to solicit or advertise, and he thought if men only showed a little patience they would obtain a better practice by not soliciting than otherwise.

The SECRETARY said it seemed to him that Mr. Rutherford had some personal grievance. There was no doubt, from the present state of the veterinary profession, the struggle for existence among the greater number of practitioners, that practices of a very objectionable nature were frequently resorted to. It was consolation to know that they, as a rule, recoiled on those mean enough to perpetrate them. The high reputation of Mr. Rutherford as a veterinarian was too firmly established for those who were canvassing his clients to harm him, but with younger practitioners such practices tended to do injury. Their Council, however, he was glad to say, was imbued with the desire to purify the profession, and were doing good work in that way. Many things were done by veterinary surgeons that had no parallel in the medical profession, and that most certainly retarded its social elevation.

The PRESIDENT said he could not say much on this subject from practical experience, and, seeing that the Royal College of Veterinary Surgeons were doing their duty in this matter, he did not think it necessary to go into detail on the subject, unless some member wished to move a resolution expressing their abhorrence of the subject.

Death of Members.

The PRESIDENT said they had to mourn the loss by death of two members —Mr. Bissett, of Brechin, and Mr. Kay, of Lochee. He did not know much of these two gentlemen personally, but perhaps the Secretary might add a word here.

The SECRETARY said both gentlemen were very estimable, very sound and loyal veterinarians, loyal to the society and loyal to the profession. He moved that letters of condolence be forwarded to the representatives.

Professor WILLIAMS seconded.—Agreed.

The PRESIDENT rose amid applause, and said: "I have great pleasure this day in giving you all a hearty welcome to Berwick-on-Tweed, also to thank you for adding another date to its history of renown. Once more the old town is in the hands of Scotland—the Scottish Metropolitan Veterinary Medical Association—a welcome change, even professionally. We meet everywhere, and invite our neighbours to join in a combat of love and learning, not as raiders of old, but for the national as well as for the professonal and personal good. On this occasion you are not to be favoured with a long, learned paper from some member of our own or sister profession, but I am not sure that is any great loss. I am inclined to think it would soon prove a benefit if we had some fixed rule of giving periodical opportunity to any member to bring forward any subject in which he finds difficulties. Jointly, we might be able to solve them, and cause one to feel specially benefited and consequently interested in our association's attendance. For example, the difficulty of "Pervious Urachus" in foals. Veterinary life and work in this town and district, like other places, is exempt from some diseases, while it has a greater monopoly of others. In this and surrounding districts we have an unusually large number of cases, mostly fatal, and often running their course very rapidly. I am told I have had by far the greatest number of cases of scirrhus of the os uteri. Of parturient apoplexy we generally have a fair share. This year, there has been more paralysis, combined with a small and diminishing amount of apoplexy. But the *fatal* cases have been fully as numerous. Sometimes in summer, when we have severe weather, we have had cases of apoplexy and paralysis in cows a considerable time calved. And without a knowledge of their history no one could have distinguished them from cases of ordinary parturient apoplexy of a bad type. For many years I have observed very distinctly that severe weather and cold draughts exercise a great causative influence in the disease, milk fever.

Although this is not properly a cattle breeding country, still I am compelled by observation to believe that tuberculosis is a good deal more prevalent among young animals than many writers would have us believe. On some occasions, among young calves, I have seen its contagious and fatal results very vividly demonstrated. In dairy cows, I believe, we are not so bad as in the south-west of Scotland; but I think the question of tuberculosis in all dairy cows is one which we should keep in *perpetual motion* until it is taken up and treated in a satisfactory manner by our authorities, both local and national. We should make it impossible for them to shelve the reports on this subject. I agree with anyone who says that veterinary surgeons—if they did so—would run a risk of being considered selfish agitators, as being personally and pecuniarily interested in the subject. But by whom? By those who do not know the subject. What does the able medical man say? What does anyone say who has made himself fairly acquainted with the extent and results of this disease? Does he not say—"You (veterinary surgeons) have known the subject all along, because you, and you only, have had the opportunities. You have known how it has been spreading in the bovine world; you have seen the great and increasing number of shockingly diseased animals which have been used to produce our milk supply and that without let or hindrance. You know the similarity of the nature and effect of the disease in man and animals. Therefore, you should have led and continued ,to lead, with zeal and energy, in this essentially necessary movement. But, have you done so? Have you not acted the coward a good deal? I ask the whole profession individually, what have we done? A number have done nobly; some a little; but the majority nothing. At present the subject is going forward without us, but it will require us all united to accomplish the desired end. Therefore let everyone be up and

doing—doing what? First spreading a knowledge of the subject among all city and town authorities, county councils, parish councils, and every person whom you think has some amount of intelligenee and who takes any general interest in the public welfare. It has occurred to me quite recently that one of the best, easiest, and surest ways of spreading knowledge is by a number of us standing good for the first edition of a tract (size undecided) which would contain pertinent extracts from the numerous speeches and writings, which are now available. If every member were to spend a few shillings in this way, we would soon diffuse a knowledge and promote an interest which would rapidly extend. Also our authorities have little or no idea of the diseased condition in which many of our dairy cows are while supplying us with milk. Therefore we should make it convenient for them to see *post-mortems* of such cows. And, if hearing and seeing will not influence the authorities in our districts, to action in the right direction, then you are justified in calling the public to *post-mortem* demonstrations, to see for themselves. some of the sources of their milk supply. Again, why do the various Veterinary Medical Societies not send petitions to the Board of Agriculture asking them to go forward on this subject and specially so on the subject of veterinary inspection of all dairy cows, an item which would, alone, do a vast amount of good? Petitions to the Government should also be promoted, and sent from the public everywhere. Having given them a little education on the subject, I am sure each one would willingly lend all the aid in his power. Who does not want to be sure that his food is free from disease, especially for his children and infants? I have no doubt the question is being asked by some of you; Who do you single out dairy cows? Are our pure-bred herds not very badly affected and urgently requiring to be taken in hand? I agree with you, but I am not at all sure that the course of action which may be found essential in the one case would be adopted in the other. Besides, the dairy cow department is by far the most urgent half of the subject. It means life and health or death and disease to thousands of the rising generation every day. We all know "Rome was not built in a day," and it is generally best not to attempt too much at one time, therefore I think it would be well to do justice to dairy cows first. In a general way, I think it may be said that we exist for the animal world, and the animal world specially belongs to agriculture; therefore, our interests are much bound up together. During the last two years, the east of Scotland—which is specially a cattle-feeding district—and other districts as well, have been placed by the Board of Agriculture, in some important aspects, in a disadvantageous position. More recently it has put us in this district in the same position. Therefore, I think it is our duty, very specially in the present political convulsion, to use our influence individually to obtain the most distinct and positive assurance of personal help in seeing that justice and fair play is done to every interest, and that no person or party obtain any preference at the expense of another. I hope, also, that the conjoint professional agitation will be maintained until the desired results have been obtained. Considering what we have done for agriculturists, I think they and their associations should lend us their help to remove our grievance, which is their grievance also.

Mr. STEVENSON said the subject of tuberculosis was one of the burning questions of the present day and of the future. He was struck with what the President said as to the amount of the disease in young calves. He believed that was not the experience of the profession generally. It was pretty well known it was rarely seen in calves. He had seen it in two young calves. In one case the mother died from milk fever, and making a *post-mortem*, tuberculosis was found in one lung. The calf lived for three weeks, and when slaughtered there was a large piece of tuberculosis on the same lung, as hard as could be.

He had not the slightest doubt that animal was calved with the tuberculosis in the lung. In the other case the calf was born—he was speaking a few days after the birth—suffering with heart affection. It died in the course of a few days. On making a *post mortem*, he found tuberculosis on the liver, accompanied with a weak, flabby heart. The cow that calved developed some curious symptoms, heavy breathing aud snoring, and when sent to be slaughtered it was found to be affected with tuberculosis. There was no doubt milk cows suffered most from tuberculosis, and the cow that gave most milk was most likely to suffer. Nowadays, cows were simply reduced to milking machines, and were more liable than otherwise on that account. They must remember that fat prize cattle were also very much affected with tuberculosis, and were never suspected during life. That was one of the difficult parts of the question to be taken in hand. He had had some experience of tuberculin, and so far, he believed, it was a fair good test. The previous Sunday he had three gentlemen at his farm, one a veterinary surgeon, and another a farmer from Copenhagen. He wanted to know what Denmark was doing, and he was told they had given tuberculin a very long test. It was done by Government, and affected animals were isolated from those not affected. But what about the calves? When they were born they were inoculated, and when it did not re-act they were considered healthy. When two years of age they were again inoculated before serving. He considered the milk of affected cows should be boiled before use. If the disease was general, the whole carcase should be destroyed as unfit for food, but if the flesh was firm and the colour good, he thought it might be used. If the udder of the cow was in any way affected, he believed the milk would also be affected.

The SECRETARY agreed with all Mr. Stephenson had said, and could only assume that the great obstacle in this country to the suppression of tuberculosis, was the want of money. The existence, the prevalence, and the evil consequences of its existence, had been conclusively proved, and we were still *in statu quo*. While that small but enlightened nation, Denmark, for the past two and a-half years, had been doing splendid work, in combating and clearing away the disease, surely our great nation should be as able to tackle this pestilence as our northern friends. It was nothing short of a shame and disgrace that disease was allowed to be disseminated throughout the country by dairy cows, when the pressing need of their veterinary supervision had been so abundantly and clearly proved.

Mr. STEPHENSON thought the Secretary was making a mistake, and from his own experience he felt that tuberculosis was not so prevalent now as in former years, which disputed the fact of poisoning by dairies.

Professor WILLIAMS referred to the presence of tuberculosis in horses, especially prize horses, and in all instances he traced this to the fact of their being reared on the milk of cows affected with that disease. He thought it a great mistake to condemn all carcases of animals affected with tuberculosis. When the flesh was soft and flabby it was certainly repugnant to have such food consumed, but if it were thoroughly cooked, it might not induce tuberculosis. Unless the meat was eaten nearly raw it might not affect a human being. He did not see why they should not license butchers to sell what was termed diseased meat, and if people got the meat at a cheap rate, and knowing also that a thorough cooking rendered it right, he did not see why they should not sell it. He was compelled to differ as to the increase of tuberculosis. His experience was quite as long as most men in the profession, and he considered there was far more tuberculosis now among cattle than there was in his younger days. He would not admit that it was due to their better observation now. Undoubtedly they did observe better now, but, at the same time, the contrast to his mind, having had opportunities of making *post-mortem*

examinations since he was a boy, he could say that very seldom indeed did they find it till now. He thought it high time Government stepped forward in this matter.

Mr. LOTHIAN, DUNS, also spoke of the increase of tuberculosis in Berwickshire, in his practice there being now four cases to one.

Several clinical cases and exhibitions were afterwards gone into by the members.

Mr. YOUNG, of *The North British Agriculturist*, proposed a very hearty vote of thanks to the President (Mr. Cameron) for his reception that day, and only regretted the smallness of the meeting.

The PRESIDENT returned thanks, and said if they had not had quantity they had quality.

It was next resolved that the Society should forward a petition on the subject of tuberculosis, through the R.C.V.S., to the Board of Agriculture.

The proceedings then terminated.

The following has been forwarded to the Minister of Agriculture :—

EDINBURGH, *25th July*, 1895.

THE SCOTTISH METROPOLITAN VETERINARY MEDICAL SOCIETY.

To the President and Council of the Royal College of Veterinary Surgeons.

The President and members of the above Society, which numbers on its roll many of the leading veterinarians in Scotland, are of opinion that the rapid and alarming spread during late years of bovine tuberculosis among the cattle generally, and the dairy stock in particular, of Great Britain and Ireland, cannot but be regarded in the light of a great national danger, and that stringent measures to prevent the extension of this dangerous and insidious disease are urgently necessary, and should be at once entered upon.

They therefore respectfully request the influence and aid of the President and Council of the Royal College of Veterinary Surgeons, to bring these indisputable facts and the opinions formed thereon to the notice of the Minister of Agriculture.

Further, that the Royal Commission formed to investigate this disease, in relation to its danger to human life, have some months ago submitted their conclusions to the Government, that tuberculosis was prevalent in cattle, including dairy stock, and was communicable to mankind through the consumption as food of their milk and flesh, and that this Society regrets so grave a state of matters should continue to exist unheeded by the Government.

It is, moreover, their opinion—

1st. That bovine tuberculosis should be scheduled in the Contagious Diseases Act of 1894;

2nd. That all dairy cows should be placed under veterinary supervision;

3rd. That among all suspected herds and dairy stock the use of the diagnostic test, "tuberculin," under scientific supervision, should be made compulsory.

The co-operation and support of sister societies in the veterinary profession have been earnestly requested, as the Scottish Metropolitan Veterinary Medical Society considers that a duty has devolved upon the whole profession to combine to strengthen the cry to the Government for the adoption of measures whereby bovine tuberculosis in this country may be checked and ultimately extirpated.

It would, in conclusion, further point out, for the consideration of the Government, that the longer the delay the greater the difficulties and the attendant expense to cope with the disease that will inevitably follow.

Obituary.

THE death of Mr. William Barrow, the well-known veterinary surgeon of Newmarket, took place on July 15th, at the age of 79. By his demise Newmarket has lost one of its oldest and most highly-esteemed inhabitants. To all who knew him he was endeared by his cheerful disposition, his uprightness of conduct, and his strict sense of honour in the performance of those duties connected with the turf which have made his name famous in connection with so many of the most celebrated winners of the past four decades.

Bull, Wm. Robert, Etwall, Derbyshire, July, 1883.
Collins, James, late R.V.S., A.V.D., Fellow February, 1877. Graduated December, 1852—1867.
Freeman, C. B., A.V.D., May, 1889.
Callow, John, Horsham, May, 1852.
Lye, Charles Augustus, Crewkerne, Somerset, May, 1886.

THE RIGHT HON. T. H. HUXLEY, F.R.S., D.C.L., LL.D., &c.

In the late Professor Huxley, science mourns her most distinguished champion, and the medical profession has lost one of its most illustrious members. Like his great fellow-worker in the fields of science, Charles Darwin, he procured an appointment in the Navy at the outset of his career, which gave him opportunities for scientific work in a survey of New Guinea, the Louisiana Archipelago, and the Barrier Reefs of Australia that he took full advantage of. On his retirement from the Navy, he accepted the post of Palæontologist and Professor of Natural History in the School of Mines, and in the same year, 1854, he was appointed Fullerian Professor of Physiology in the Royal Institution, and Examiner in Physiology and Comparative Anatomy in the London University. In 1863 he became Professor of Comparative Anatomy of the Royal College of Surgeons; in short, it would be tedious to enumerate all the appointments he held, and the honours of which he was the recipient. One unique distinction (as far as scientific men are concerned) should be mentioned, that being his appointment to the Privy Council.

His was a versatile genius. He possessed a mind fitted to grasp any subject. The Royal Commissions on Vivisection, Contagious Diseases, Fisheries, Scottish Universities, &c., numbered him among their members, and his writings are without an equal in scientific literature in the points of incisiveness, strength, directness, and lucidity. Many subjects were graced by his pen, embracing works of great value. His work, "Lessons in Elementary Physiology," has run through numerous editions. Others that may be mentioned are "Lectures on Comparative Anatomy," Anatomy of Invertebrate Animals," "Science and Culture," "Construction or Evolution," "Anatomy of Vertebrate Animals," "Lay Sermons and Addresses," "Evolution and Ethics," besides numerous essays, not yet collected into book form. His life-long friend, Sir Joseph Fayrer, K.C.S.I., in one of our leading medical journals, writes of this great man in language that we cannot do better than quote:—

"The loss of the foremost biologist of this or any other country will be universally deplored, for he has for many years had a predominant influence on the progress of biological science, and the expansion of scientific teaching, which was not surpassed by even that of his friends, Darwin and Tyndall, and has contributed beyond all others to the advancement of natural knowledge and the promotion of the scientific methods of investigation of the problems of life. To this end the whole strength of his surpassing intellect was steadfastly, through good and evil report, devoted, and the results have been recorded in language so incisive and convincing, as to leave on all who have followed his teaching the impression of incontrovertible truth."

Professor Huxley was born in the year 1825, at Ealing, and interred in the cemetery at Finchley, July 4th, 1895.

Reviews.

THERAPEUTISCHES JAHRBUCH DER THIERHEILKUNDE FUR DAS JAHR, 1894. VON EUGEN BASS, THIERARZT: Berlin, Richard Schoetz (Price 3 mark=3s.),

This is a very useful and very interesting *brochure*, compiled by a practising

veterinary surgeon in Gräetz (Posen, Germany), and is a kind of compilation which might very advantageously and, we doubt not, very profitably be imitated by one or other of our enterprising and industrious English veterinary surgeons, if he could find an equally enterprising publisher; in this there ought to be no difficulty, we should think. In order to give our readers an idea of the scope and purpose of the book under review, we cannot do better than quote the preface: "The following pages," says Mr. Bass, "are intended to furnish my professional colleagues, occupied with the practical work of their profession, with an accurate survey of what has been accomplished in veterinary therapeutics during the year 1894, without the trouble of turning up all sorts of magazines and journals; and likewise to afford them an opportunity of learning with ease to themselves the pros and cons of all the great therapeutic questions that have been discussed during the past year. The practical veterinarian cannot take in all the veterinary journals, nor can he always afford to purchase every new edition of every work on therapeutics, and in very few cases does he think of making summaries for himself. The present year-book is intended to supply his needs in this direction. For the purpose I have had in view, I have made extracts from the various German and foreign journals of articles referring to therapeutics, and I have done this generally direct but sometimes, when as in the case of some foreign journals, the particular number could not be obtained, I have contented myself with quoted articles. My readers will understand that I have not incorporated everything, nor indeed anything without careful sifting: what was clearly worthless I have rejected."

To give our readers an illustration of the manner in which Mr. Bass has accomplished his task, we turn to page 20, where we find, under the title of Castration, twelve references to articles written by German, French, and English surgeons, with chapter and verse for those who wish to go deeper into the matter. Then follow short summaries of the more important among the articles referred to, and details of the medicaments used by the surgeons. An important article written by the eminent surgeon Pflug gets a whole page to itself, but the information given is so full and so comprehensive that one is not surprised at the amount of space granted to it. We recommend the book to those of our readers who understand German, as being a very useful compendium of information on the great variety of points. Let them not be terrified by such ponderous words as Samenstrangverhärtungen! The Germans are very patriotic and we admire their patriotism, but we wish it did not take this alarming form; that they would condescend to use Latin phrases more frequently, instead of these puzzling Teutonic combinations.

EXPERIMENTS ON LIVING ANIMALS.

THE Return showing the number of Experiments performed on Living Animals in the United Kingdom during the year 1894, under licenses granted under the Act, 39 and 40 Vict., c. 77, distinguishing Painless from Painful Experiments, has just been issued by order of the House of Commons.

It gives information of great interest and affords evidence that the veterinary is keeping abreast with the medical profession in its efforts to throw daylight on those mysteries of nature concerning which both professions have until now been in total darkness.

The total number who held licenses during 1894 was 185, of whom 56 performed no experiments. Those licenses and certificates have been granted only upon the recommendation of persons of high scientific standing, to gentlemen who, by their training and education, are fitted to undertake experimental work and to profit by it.

The total number of experiments performed in 1894, was 3,104; of these, 1,070 suffered no pain, as they were placed under complete anæsthesia from

before the operation until put out of life; 1,507 were merely inoculated, or hypodermically injected, the remainder being animals that were anæsthetised during operations, following which the wounds being dressed antiseptically, they suffered little or no pain during the healing process. Our veterinary colleges, notably the London institution, carried out 135 experiments.

ENLARGEMENT OF THE PROSTATE GLAND IN A GELDING.

BY JOSHUA A. NUNN, F.R.C.V.S., D.S.O., C.I.E., VETERINARY-CAPTAIN, ARMY VETERINARY DEPARTMENT; PRINCIPAL, LAHORE VETERINARY COLLEGE.

THE case in question was sent to the hospital of the Lahore Veterinary College in July, 1894, on account of his passing blood in the urine. The animal was an aged pony gelding and had been in the owner's possession for some little time, at least a year if not more, as far as could be made out. He had been regularly ridden and driven, was in good condition, and had been well fed and cared for. A few days before he had been noticed passing blood in the urine, which the owner stated he had never before observed since he had been his property. It was also noticed that there was a slight difficulty in urinating, the animal straining more than natural. No external wound or ulcer could be detected on the penis, and thinking that perhaps a calculus might be the cause of the trouble, the bladder was examined. On introducing the hand into the rectum an enlargement of the prostate gland was at once detected; the lateral lobes of the gland on each side of the urethra being as large as one's clenched fist. There was no pain caused by pressing on them, neither was there any sensation of heat conveyed to the hand in the rectum; the gland appeared to be of normal consistency, neither too hard nor too soft, the right lobe being somewhat larger than the left. The catheter was early passed, and as the owner could not lay the pony up Iodide of potassium, infusion of Bachu, and decoction of Ispaghul. (*Plantago Ispaghula* of Roxburgh) an indigenous drug largely used by natives in cystitis, uretheritis, and strangury (*vide* "Bazar Medicines of India," Waring, p. 106), was prescribed, the owner being told that if there was any difficulty in passing urine to bring the patient again to the College to have the catheter passed. He was also advised to give the pony laxative diet and an occasional enema to avoid mechanical irritation to the gland by the passage of hardened pellets of fæces as much as possible. The pony was lost sight of till June 15, 1895, when I accidentally came across him again, and on examination the enlargement of the prostate was found to have entirely disappeared, and no blood or difficulty in passing the urine had been experienced since the first attack. Hypertrophy or enlargement of the prostate appears to be anything but common in the horse. A case mentioned in Williams' "Veterinary Medicine," p. 726, is the only one I am able to find in the dog; it is frequently seen in old animals. The case in question appears to me to be unusual occurring in a gelding. The pony was aged, had been in the owner's possession a year or more, and although there is no history the inference is that he had been castrated some years before. While with his owner he was known to have enjoyed good health for a year. So it is to be presumed that the enlargement of the gland took place about the time the bloody urine was first noticed, and certainly within less than 12 months it had disappeared. Furthermore, what appears to me to make this particular case in a gelding of interest, is that for enlargement of the prostate gland in human beings, castration is advocated and performed, the gland afterwards shrinking (*vide* Proceedings of a meeting of the Clinical Society of London, April 26th, 1895), two cases in which orchotomy was performed for enlargement of the prostate by Mr. C. Mansell Moullin (*Medical Press*, May 1st, 1895), whereas in this patient enlargement

took place some years after the testicles had been removed, quite contrary to what one would expect. It would be exceedingly interesting if it could be ascertained, if, in any of the cases in the human subject in which castration had been performed for enlargement of the prostate, there was ever any recurrence of the trouble.

FITZWYGRAM PRIZES.

THERE were nine competitors entered for these prizes. The written portion of the examination was held in London and Edinburgh on the 6th June, and the *vivâ voce* on the 26th June at the Royal Horse Infirmary, Woolwich. The following is the result:—

No.	Written.	Vivâ voce.	Total marks.
57	655	1,515	2,170
60	695	1,350	2,045
90	645	1,350	1,995
81	630	1,290	1,920
74	868	1,005	1,873

No. 57, Mr. W. E. Ison, first prize, £50, Dick Veterinary College, Edinburgh.

No. 60, Mr. A. R. Routledge, second prize, £30, Dick Veterinary College, Edinburgh.

No. 90, Mr. J. Spreull, third prize, £20, New Veterinary College, Edinburgh.

The examiners were Veterinary-Captain Blenkinsop and Mr. Sidney Villar. Mr. A. W. Hill, hon. sec.

The questions set for the written portion were as follows:—

Anatomy.

(1) Give the attachments of the *diaphragm* of the horse and the structures passing through it.

(2) What muscles are attached to the *olecranon* of the horse? Give the nerve supply, and physiological action of each muscle.

(3) Define a serous cavity, and name those you know.

(4) Describe the circle of Willis, and state the structures it surrounds.

Physiology.

(1) Describe the differences in the secretion of the various *salivary glands* of the horse.

(2) Describe the mammary gland, and the difference between the composition of the milk of the cow, mare, and ass, giving, if possible, a table showing roughly the relative value of milk from each of these animals.

(3) Describe the progress of *deglutition*, giving the nervous mechanism as far as you know.

(4) What are the functions of the *iris* with reference to distinct vision? Describe briefly the relations of the *iris* to the nervous system.

Pathology.

(1) What do you understand by *immunity*, and what theories have been propounded to account for this condition?

(2) What are the chief points of difference between the bacillus of anthrax and black quarter?

(3) Mention the most diagnostic lesions usually found at a necropsy of an animal which has died from *swine fever*? With what other diseases may *swine fever* be most readily confounded?

(4) Describe the macroscopical and microscopical appearances of a glander nodule from the lung of the horse.

(5) Compare macroscopically and microscopically the lungs from a case of pleuro-pneumonia contagiosa and sporadic pneumonia of cattle.

(6) What do you understand by equine influenza? What are the most frequent complications of this disease?

CONTAGIOUS DISEASES ANIMALS ACTS, 1894.

ABSTRACT OF RETURNS for the week ending June 29th, 1895.

ENGLAND AND WALES.

Pleuro-Pneumonia.	Swine Fever.	Anthrax.	Glanders (including Farcy).	Rabies.	Foot-and-Mouth Disease.
None	Died ... 127 Slaughtered 1181 Slaughtered, suspected, but found free from Disease 66 1374	Fresh Outbreaks 4 Animals Attacked 7 Deaths 7	Fresh Outbreaks 18 Animals Attacked 24 Animals killed 21 Died ... 1	*Killed* Rabid Dogs 14 Rabid Cattle 1 Rabid Swine 3	None

* Wales, of Swine Fever 12 Died and Slaughtered.

SCOTLAND.

None	Died ... 2 Slaughtered 14 Slaughtered, suspected 1 17	Fresh Outbreaks 2 Animals Attacked 2 Died 2	Fresh Outbreaks 1 Animal Attacked 1 Killed ... 1	None	None

IRELAND.

None	Died ... 43 Slaughtered 83 Slaughtered, suspected but found free from Disease 38 164	None	None	*Killed* Rabid Dogs 18 Rabid Cattle 4 Rabid Swine 2 Dog Died 1 25	None

ABSTRACT OF RETURNS for the week ending July 6th, 1895.

ENGLAND AND WALES.

None	Died ... 176 Slaughtered 1291 Slaughtered, suspected but found free from Disease... 36 1503	Fresh Outbreaks... 9 Animals Attacked 14 Died ... 14	Fresh Outbreaks 19 Animals Attacked 25 Animals Killed 29	*Killed.* Rabid Dogs 8 ,, Cattle 1 ,, Sheep 2 ,, Swine 1 *Died.* Dogs ... 1 Swine ... 1	None

SCOTLAND.

Pleuro-Pneumonia.	Swine Fever.	Anthrax.	Glanders (including Farcy)	Rabies.	Foot-and Mouth Disease.
None	Died ... 1 Slaughtered 4 Slaughtered, as suspected but found free from Disease 2	Fresh Outbreaks... 1 Animals Attacked... 3 Died ... 3	Fresh Outbreaks — Killed ... 2	None	None

IRELAND.

None	Died ... 70 Slaughtered 128 Slaughtered, found free from disease 21 219	None.	None	Dogs Killed 12 Cattle ,, 1 Dogs Died 2	None

ABSTRACT OF RETURNS for the week ending July 13th, 1895.

ENGLAND AND WALES.

None	Died ... 109 Slaughtered 1229 Slaughtered, but found healthy 49 1387	Fresh Outbreaks 11 Animals Attacked 22 Died ... 9	Fresh Outbreaks 31 Animals Attacked 36 Killed ... 31 Died ... 2	*Killed.* Dogs ... 10 Cattle ... 1 Swine ... 1 12	None

* Wales, of Swine Fever, 2 died, 24 were slaughtered.

SCOTLAND.

None	Died ... 6 Slaughtered 46 Slaughtered, but found to be healthy 3 55	Fresh Outbreaks 1 Animals Attacked 1 Died ... 1	None	None	None

IRELAND.

None	Died ... 57 Slaughtered 84 Slaughtered, but found to be healthy 34 175	None	None	*Killed.* Rabid Dogs 17 ,, Cattle 3 ,, Sheep 1 ,, Cat ... 1 22	None

SUMMARY OF RETURNS.

Period.	Pleuro-Pneumonia. Number of Cattle Slaughtered.			Swine-Fever.			Anthrax.		Glanders (including Farcy).		Rabies.	Foot-and-Mouth-Disease.	
					Number of Swine Slaughtered.								
	Diseased.	Having been in Contact.	Suspected.	Number of Swine Died of Swine-Fever.	Diseased or having been exposed to Infection.	Suspected.	Number of Fresh Outbreaks Reported.	Number of Animals Attacked.	Number of Fresh Outbreaks Reported.	Number of Animals Attacked.	Number of Diseased Animals Killed or Died.	Number of Fresh Outbreaks Reported.	Number of Animals Attacked.
Week ended July 13, 1895 ..	..	..	..	115	1275	52	12	23	31	36	12	..	..
Corresponding week in 1894	..	..	..	155	1383	32	8	11	26	49	5	..	..
Corresponding week in 1893	..	..	..	119	153	..	15	32	31	49	..	..	..
Corresponding week in 1892	..	..	3	144	277	..	5	14	34	89	1	..	..
Total for 28 Weeks, 1895 ..	..	43	10	5021	27289	852	262	593	548	859	466	..	..
Corresponding period in 1894	8	303	29	4364	39514	652	311	641	571	813	106	..	..
Corresponding period in 1893	13	346	43	3354	6109	..	258	615	773	1244	43	2	30
Corresponding period in 1892	90	987	112	3106	7393	..	141	320	825	1503	18	93	5262

NOTE.—The figures for the current Year are approximate only.

Board of Agriculture, 19*th July*, 1895.

ABDOMINAL SURGERY.

BY PROFESSOR J. MACQUEEN, F.R.C.V.S.

The numbers refer to a list of references given at the end of the paper.

In a moment of forgetfulness, influenced no doubt by the honour of the request, I promised to prepare a paper on Abdominal Surgery. At that time nothing seemed easier—the field was large and not much trodden; but subsequent consideration quickly dissipated my feeling of ease, and, like the Israelities, I soon discovered the want of "straw." Unable to make surgery without operations, I resolved to gather together, as far as I might be able, recorded cases illustrative of the subject, and to add what little I could to the experience of others.

It is conceded generally that in dogs, swine, and cattle the peritoneum can be opened, wounded, and mutilated, without danger to life, or even incurring serious spmptoms. But this confidence is usually withheld from similar wounds in horses, because of the supersensitiveness of the peritoneum to inflammation. Being unwilling to admit this peculiarity, which appears to me less real than imaginary, I shall not attempt to explain it. My fears concerning wounds of the horse's peritoneum were considerably relieved by seeing Farmer Miles castrate an abdominal cryptorchid in 1878, and later experience of Miles's method has done nothing to shake my belief in the possibilities of abdominal surgery. Having more faith in fact than theory, I venture to give abstracts of cases that show—perhaps better than experiments—the injuries the peritoneum will support without fatal consequences.

Bean (No. 1) attended a mare with omentum protruding from a wound of the abdomen. He excised twelve inches of the omentum, and sutured the wound. The mare recovered.

Gaullet (No. 2) treated a horse with a wound over seven and a half inches long, caused by a scythe. Portions of double colon and small intestine protruded. The colon was wounded for a length of two inches, and its contents escaped. The small intestine was replaced, the wound of the colon closed by a zigzag continuous suture, and the abdominal wound sutured in layers. Complete recovery occurred in six weeks.

Faussol (No. 2) was called to an ass with an irregular wound of the left flank, caused by a tree. About a foot of bowel protruded. Reposition and suture. Recovery in about five weeks.

Leblanc (No. 3), on February 4th, 1831, saw a horse that had been struck in the right flank by a cabriolet shaft, which penetrated nearly a foot into the abdomen, where it remained fixed in the wound. On withdrawing the shaft, blood flowed freely, and required a strong compress to stop it. At each expiration either blood or a blood-tinged fluid was forced from the wound which gaped and admitted air. Leblanc explored the wound, felt the undulatory movements of the bowels, and found the abdomen almost filled with fluid. As far as possible this fluid was removed, and the wound was closed with *dossil sutures*. Next morning the horse appeared very weak, with head resting on the manger, body leaning against the stall, and abdomen much distended. Leblanc untied the sutures, when half-a-pint of fluid escaped. He tried to get rid of more fluid by compressing the horse's sides, but much still remained. He thought of suction, but decided to make another opening lower down. He therefore incised the wall to the right of the umbilicus, and introduced a tube; fluid escaped, but not in large quantity. He altered the direction of the tube from time to time, and removed altogether about two pints of fluid. The tube was left in position, and the wound in the flank resutured. On the 7th the discharge from the tube was thicker and rust-coloured, on the 8th it was milky, and on the 9th it was pus-like and quantity increased. From the 10th to the 13th, purulent fluid continued to

fall from the tube. General condition of patient improved. Discharge continued unaltered till the 25th, when the horse—much better—walked without tottering. The horse was discharged from the infirmary and put to exercise on May 25th, and returned to ordinary work early in June.

KARKEEK (No. 4) attended a pony with ventral hernia, injured by a kick, which also wounded the colon. Wound closed by packing thread; abdominal sutures supported by compress. Recovered.

GUILLMOT (No. 5) treated a horse with a wound, through which small intestine protruded for seven hours. Enlarged the wound and replaced intestine. Recovered.

T. MAYER (No. 6) treated a horse with protruding omentum. He excised the omentum, sutured the wound, and applied a plaster. Recovery in eighteen days. Mayer mentions another similar case which recovered.

T. D. BROAD (No. 7) attended a mare that had been gored by a bull in the right flank. Wound three to four inches; protruding bowel very dark. The mare was cast, the bowel replaced, and the wound sutured in three layers with wire; an opening was left for drainage. Recovery in four weeks. Broad states that three persons were required to keep the bowels in the abdomen during the operation.

REY (No. 8) reports a case of abdominal wound, with perforation of the bowel, in a horse. Peritonitis occurred, but the patient recovered.

H. HOWSE (No. 9) treated a cart-horse with an abdominal wound, through which two feet of omentum protruded. Excision; sutures. Recovery.

VERRIER (No. 10) in performing taxis for reduction of scrotal hernia, lacerated the colon from within; a scrotal abscess formed. Recovery after castration.

GUILHEM (No. 11) attended a horse that had been gored by an ox. Penetrating wound on left side; protrusion of portion of large bowel, which showed a wound three inches long. After casting, horse was placed on his back; intestine—slightly red—was cleared of ingesta and washed with cold water. The edges of the wound in the gut were sewn together; a second suture closed the abdominal wall, and a third the skin. Compress applied; venesection. Next day: No fever; œdema around wound from scrotum to sternum; whitish liquid drops from the wound; no fæces passed. Third day: Patient eats greedily; urinates and defæcates without difficulty. Fourth day: Recovery promising; horse moves about, and tries to pick up straw from his litter; wound suppurating. Tenth day: Progress maintained; cutaneous and muscular sutures have fallen. Eighteenth day: Wound granulating and suppurating freely; œdema less. Thirty-third day: Completely recovered.

NICOLEAU (No. 12) treated a three months' old mule that had been gored by an ox. Lacerated wound, five inches by one inch and a-half. Twenty inches of small intestine protruded. Bowel red; constitutional disturbance *nil.* Mule cast, and gut returned without difficulty. Edges of wound pared to remove bruised parts; hæmorrhage slight. Muscular wound closed by a glover's suture, and skin by six interrupted sutures. Compress soaked in weak alcohol supplied, and supported by bandages. Mule rose with difficulty after the operation. Fourth day: Case has made steady progress; no fever; wound swollen; inferior commissure slit open for drainage, and dressed with Egyptiacum ointment. Seventh day: Wound healthy, granulating; two or three sutures that had sloughed were replaced. Tenth day: Wound healing; dressing had been torn off by patient. Twenty-sixth day: Cured.

STORRY (No. 13) reports a case of ventral hernia in a horse caused by goring. He opened the hernial sac, and reduced by taxis. Recovery.

B. KETTLE (No. 14) attended a colt with abdominal wound; bowel lacerated and contents escaped. Sutured gut with fine white silk, and forced bowels back into abdomen. Closed parietes with metallic sutures. Complete

recovery in a month. Kettle remarks that in 1843 he had a case of rupture, with protrusion of omentum and intestine, which was swollen and thickened. Treated by fomentations and scarification; recovery followed. Kettle also refers to the general dread of peritonitis in such cases, and thinks the danger of this complication has been greatly magnified.

NEWTON (No. 15) reports a case of abdominal wound in a colt. Ten to eleven feet of bowel protruded. After reposition, suture, and the application of a bandage, recovery took place in three weeks.

DYER (No. 16) treated ventral hernia in a filly by incision of the sac, including peritoneum, and sutured the wound in layers. Recovery.

TAYLOR (No. 17) attended a pony with protruding intestine. The patient was chloroformed, wound enlarged, bowel replaced, and the wound closed by continuous thread sutures. Recovery in three weeks.

BOVETT (No. 18). Abdominal wound in a cob; colon protruded; reposition and suture. Recovery in six weeks.

LEWIS (No. 19). Colt with ventral hernia. Sac laid open, reduction, and metallic sutures. Recovery.

EMMOTT (No. 20). Filly. Escape of thirty inches of omentum. Excision and suture. Recovery.

MOTTET (No. 21). Mare with umbilical epiplocele following puncture of œdematous swelling. Excision of omentum and sutures. Recovery.

ANDERTON (No. 22). Horse. Abdominal wound eight inches long. Omentum and part of colon protruded. Reduction, sutures, and compress. Recovery.

OWLES (No. 23). Mare with strangulated ventral hernia. Manipulation failed. Opening enlarged; reduction; sutures. Recovery.

DROLSHAGEN (No. 24) treated a foal with a wound caused by horning. Omentum and bowel prolapsed. After cleansing, excised a portion of omentum, reduced the bowel, and sutured the wound. Recovery in three weeks.

KLEMPAUL (No. 24) attended a mare with a wound near the umbilicus, caused by harrows. Small intestine protruded; reduction. The mare recovered, and fourteen days later gave birth to a foal.

RICHTER (No. 24) in setoning the abdomen used a bistoury. After operation, ingesta issued from the wound, and subsequeut examination revealed a wound of the cæcum. Six to seven quarts of fluid were discharged. Recovery in eight days.

JEWSEJENKO (No. 25) in Russo-Turkish war noted thirty-one abdominal wounds in horses. Of eight with shot-wounds of the bowels, five died of peritonitis, and three recovered after suturing the wounds. In two, wounds of stomach by splinters led to death. One gastric wound by ball was sutured and healed.

STOCKFLETH (No. 25) mentions twenty-seven abdominal wounds, with prolapse in fifteen. Of fourteen horses, two mules, two cows, and one dog—two horses, one cow, and one mule died.

CRUZEL (No. 26) reports a case of abdominal injury caused by horning in an ox. The swelling was opened, and a cicatrized rupture of the rumen discovered, with about eight pounds of ingesta between the stomach and skin. The wounds were cleansed and relieved of necrotic tissue. A compress was applied and the diet restricted. Recovery in fifteen days. Some time afterwards the ox was slaughtered. Examination revealed adhesion between stomach and abdominal muscles, and a small abscess in centre of attachment.

J. STOWRAR (No. 27) attended a cow that had been gored in the right flank. Swelling as large as a bushel measure. He diagnosed strangulated hernia, and tried to reduce it, but failed. He next opened the sac and "attempted

to knead in the gorged intestine," without success. Having placed the cow on her back, he incised and emptied the bowel, sutured and carefully washed it, and then accomplished reduction. The cow recovered, and eight months after operation was sold to a butcher, who found a large abscess in her side.

MENZIES (No. 28) was called to a sheep that had been injured by wool shears. The wound was six inches long. Rumen, omentum, and other viscera dragged on the ground. He excised the omentum, removed ingesta from rumen, and after cleansing sutured rumen with cotton thread, returned it to the abdomen. Recovery.

RODLOFF (No. 29), in reducing a hernia in a dog, accidentally incised the bladder. The wound was sutured, and the dog recovered.

THOMSON (No. 30) says that whilst castrating a pig, "the animal sprang up and the scalpel was plunged deep into the belly." After operation, Thomson saw fæces escape from the wound in the side. The greater part of the small bowel had to be drawn out before the wound in it was seen. The knife had divided the gut almost through, and wounded the mesentery. The gut and mesentery, nicely adjusted, were sewn together and replaced, the wound was sutured, and the pig soon recovered.

The foregoing cases by no means exhaust the list of recorded abdominal injuries in horses and cattle. Those given may serve to substantiate the contention that the horse is not specially susceptible to peritonitis from wounds of the abdomen.

LAPAROTOMY OR ABDOMINAL SECTION.—It is said that Henon (1800), professor at Lyons Veterinary School, frequently performed this operation, but particulars of his cases have not been published. In this country, laparotomy was performed on a mare by KING (No. 31), a veterinary surgeon of Stanmore, in 1829. The mare had been affected with abdominal pain for 13 days, during which time she had been bled, purged, and clystered without benefit. King secured the animal in the erect position, incised the left flank, introduced his hand and soon found a portion—about 12 inches—of the small intestine stuffed full and quite hard, and the gut in front of the obstruction full of fluid. He grasped the obstructed bowel, pressed it gently, and mixed its contents with the fluid. Having softened the mass in the bowel, he closed and dressed the wound in the flank. The mare died six hours after operation. Mr. King adds: "In such a case any attempt may be justifiable." Three years later, GAULLET (No. 32) operated on a moribund ass in which he had diagnosed obstruction of the pelvic flexure of the colon. He opened the flank, incised the gut—which was almost black—extracted a concretion, and closed the wounds with coarse sutures. The patient died in 24 hours. The next, and to this day the only successful laparotomy performed on a horse affected with intestinal obstruction, is that recorded by FELIZET (No. 33), of Elbœuf. In June, 1849, Félizet was called by a miller to see a horse, about nine years old, that had been affected with colic for about 16 hours. Two or three times within four months the horse had shown symptoms of constipation. Clysters had been given, but no other remedy. Rectal examination discovered a concretion, as large as a child's head, at the beginning of the floating colon. Félizet was positive of the existence of the calculus. As death seemed the only possible result, the miller was informed that his horse could not live much longer. But a conversation between Félizet and a farmer probably saved the animal's life. Five days before, the farmer's colt in jumping a hedge had opened the abdomen and torn the point of the cæcum. Félizet treated the wounds, but gave no hope of recovery. The farmer now told him that the colt had made wonderful progress; and on learning this, Félizet was struck with an idea as bold as it proved to be fortunate. At once he decided to return to his patient, the miller's horse, open the flank and extract the

calculus. Unaided by anæsthetics and antiseptics, he performed laparo-enterotomy. The horse was thrown on the left side; the upper hind leg, unhobbled, was drawn backwards, and lashed to a stout pole. The skin of the right flank was incised longitudinally, the muscles were divided with fore-finger and thumb, and the peritoneum was opened with the point of a bistoury. The left hand with fingers extended within the abdomen prevented protrusion of bowels, while the right hand in the rectum pushed the obstruction towards the flank. Acting together, the hands passed the tumour through the wound. The right hand was now withdrawn, and cleansed by an assistant. The distended bowel was gently wiped, and incised two fingers' breadth from the mesentery. To facilitate extraction the concretion was reduced by separating its fæcal crust. A furrier's suture was used for the wound in the gut, the muscles were stitched in layers, and a strong quilled suture closed the wound in the skin. Sweating profusely, the horse was allowed to rise. He was poulticed on the loins and bled six times at intervals of three hours, 21 pints altogether being withdrawn.

(*To be continued.*)

Legal News.

CONTRAVENTION OF VETERINARY SURGEONS ACT.—At the Edinburgh Sheriff's Court, on July 23rd, William Johnston, blacksmith, Roslin, Mid-Lothian, appeared to answer a charge of having contravened a section of the Veterinary Surgeons Act of 1881, in so far as he, not being a fellow or member of the Royal College of Veterinary Surgeons, unlawfully implied that he was a member of the College by declaring and stating so in a certificate granted by him to the Employers' Accident and Live Stock Insurance Company, relative to the death of an animal, the property of Mr. James Slater, of Loanhead. Johnston admitted the charge, and Mr. Craigie, advocate, who appeared on his behalf, said that his client had considerable skill in dealing with horse diseases, and farmers in the district consulted him extensively. He had been asked to fill up a certificate of the death of a horse for an insurance company, and unfortunately he had inserted the word "Yes" where the question was asked "if he was a member of the College of Veterinary Surgeons." The respondent had done so without considering what he was doing, as he had no desire whatever to pretend to anybody that he was a member of the College. Questioned by the Sheriff, Mr. Craigie said that Johnston did not charge the farmers anything, although they sometimes gave him 2s. 6d. for his advice. There was no desire on the part of the respondent to make a profit in the matter, and he submitted that an admonition or the imposition of a small fine would meet the ends of justice.—Mr. Morison, advocate, who prosecuted, submitted that this was a case where a substantial fine should be inflicted. He appeared, he said, in the interests of the public. The Act was passed to give veterinary surgeons who had passed under the terms of the Act a certain status and qualification.—Sheriff Rutherfurd said he did not doubt that the respondent had acted in perfect *bona-fide* in granting the certificate, but at the same time he committed a great error in not scoring out these words—"I being a member of the Royal College of Veterinary Surgeons," and in adding the word "yes" where he was asked to state if he was a member of the College. However, he was of opinion that Johnston had acted in good faith, and he would impose a fine of 10s. with expenses, amounting to £2 2s.—The complaint was at the instance of Mr. Mackay (Macpherson and Mackay), with the consent and with the authority of the Council of the Royal College of Veterinary Surgeons. This is the first prosecution in Scotland under the Act of 1881.

Army Veterinary Department.

London Gazette, July 23rd.

Veterinary-Major C. W. Gillard is placed on temporary half-pay on account of ill-health. Dated 24th July, 1895.

Arrivals.—Veterinary-Captain G. H. Fenton arrived from India on six months' sick leave of absence.

We regret to announce the death of a very promising young officer, Veterinary-Lieutenant C. B. Freeman, who died of enteric fever on the 5th inst., while serving with the Chitral force. This officer received the diploma of the Royal College of Veterinary Surgeons on the 29th May, 1889; was appointed to the Army Veterinary Department 10th May, 1893, and embarked for India 13th September, 1894.

Veterinary-Major B. L. Glover will take veterinary charge of the horses in the East Square, East Rear Range, Garrison Staff, and Infantry Transport, at Woolwich, vice Veterinary-Lieutenant W. E. Russell. Veterinary-Major I. Matthews, Dublin, has been detailed to act as District Veterinary Officer for Ireland, in addition to his own duties, until a successor to the late Veterinary-Lieutenant-Colonel C. Phillips, has been appointed. Veterinary-Major S. Duff-Gillespie, in charge of the Station Veterinary Hospital at Kirkee, has been deputed to Ahmedabad on inspection duty.

Parliamentary Intelligence.

DOGS BILL.

In the House of Lords on Monday, 17th June.

Lord Carrington moved the second reading of this Bill, which, he said, was a non-contentious measure, intended to consolidate nine Acts of Parliament, passed from 1839 up to 1871. The Bill was required on account of the increase of rabies in some portions of England. There were 96 cases last year, and the cases had increased this year to 150. The reason, to a great extent, why the increase was so marked was on account of the number of stray dogs wandering about the country without any sort of control, and the difficulty of dealing with them. If a police officer had any reason to believe that a dog found in a highway was a stray dog, he might seize it. If no application was made for such dog, or no owner was known, after three days it might either be sold or destroyed. A police officer might destroy any dog found in a highway which he had reasonable ground for believing to be affected with rabies. That gave, all over the country, a power at present only in the hands of the Metropolitan police. He should be perfectly prepared to reconsider the words of the clause dealing with offences so as to make it clear that the Bill in no way interfered with sporting dogs.

Viscount Sidmouth supposed the police would have no power of interference in places of public resort.

Lord Carrington said the Bill was necessarily left rather vague so as not to hurt the susceptibilities of people who were dog fanciers and that class of persons.

The Duke of Argyll thought three days rather short notice for the murder of a favourite dog. He had known several instances of friends of his who had lost favourite dogs, more friends than animals, and had not been able to recover them for more than three days. Of course, there was the alternative of sale, but practically many dogs were unsaleable, and it was shocking that people should lose their favourite dogs if they could not recover them within three days.

Lord Carrington did not think there would be any objection to meeting the noble duke's wishes. The time was that allowed in the Metropolitan

Streets Act, but there would be no difficulty unless, indeed, on the ground of expense, in extending it to a week if necessary.

LORD ASHBOURNE thought that on the first clause there would be a good deal of anxiety and perturbation of mind as to the powers there given to the police as to what they should regard as stray dogs. He suggested that the interval of three days, after which a dog could be destroyed, was too short, and urged that there should be some advertisements published as to the places where stray dogs would be kept. He did not desire to interfere with the passing of the Bill, but he considered that it should be made as cautious and prudent in its working as possible.

The Bill was read a second time.

Extracts from Foreign Journals.

DETECTIVE INJECTIONS: (1) TUBERCULIN.

TUBERCULIN is an extract from cultivations of the bacillus of tuberculosis. After remaining six weeks in the stove at a temperature of 37° Centig. (=98° Fahr.), the cultivations are sterilised at 110° (=230° Fahr.), so as to kill all the bacilli which they contain; after that they are concentrated in the hot-bath to a tenth of their original volume, then filtered on "Chardin" paper. There is thus obtained a syrupy liquid of a dark-brown colour, exhaling that odour of flowers peculiar to cultivations of the tuberculous bacillus in glycerinised media. The broth which served for the cultivation contained five per cent. of glycerine: the tuberculin obtained after concentration and filtration contains 50 per cent.; this explains why it may be preserved almost indefinitely, if it be kept away from heat and light.

When injected in small doses under the skin of tuberculous animals, tuberculin produces a more or less considerable rise in their temperature, and this enables us to affirm the existence of the disease, however recent and limited the lesions may be. In the case of healthy animals—that is, non-tuberculous—no appreciable reaction is produced. The injection of tuberculin is always innocuous; performed on milch-cows it affects in no way either the quantity or the quality of the milk produced; it in no way interferes with gestation, even in the case of animals about to calve.

For ordinary use, tuberculin is employed diluted to the extent of one-tenth in carbolised water 5 per 1,000. The best plan is to inject at one time beneath the skin, behind the shoulder, 3 to 4 cubic centimetres of of the dilution (3 cubic cent. for cows of medium size, 3½ for large cows, 4 for bulls and high-class animals). The temperature of the animal must be taken before the injection, then every two hours, beginning at the tenth hour, until the twentieth hour after the injection. When time presses, the operator may content himself with taking the temperature thrice after the injection—namely, at the twelfth, fifteenth, and eighteenth hour; the *diagnostic reaction* is measured by the difference between the initial temperature and the highest temperature noted after the injection: if this difference exceeds 1°·5 Cent. (2°·7 Fahr) it may be affirmed that the animal is tuberculous.

In practice it is usually desirable to make the injections about 6 p.m. The temperature of the suspected animals is taken next morning at 6 o'clock, 9 o'clock and noon. It may happen that the animal at the time of the proposed injection is feverish; this is caused often enough by hot weather, or by some passing irregularity in the digestive functions, but it is better in such cases to defer the operation. It is important also to remember that in very tuberculous cows, those especially which are phthisical in the proper sense of the word, the injection of tuberculin may produce no rise of temperature what-

soever, but there is no difficulty in such cases, the clinical diagnosis being always very easy.

DETECTIVE INJECTIONS: (2) MALLEIN.

Mallein is to glanders what tuberculin is to tuberculosis. Its mode of operation is identical; after sterilisation of the cultivations in the autoclave* and concentration in the hot bath, the glanders-cultivations in glycerinised broth are filtered on "Chardin" paper; we thus obtain "raw" mallein (*la malléine brute*), a syrupy liquid, of a dark-brown colour and somewhat fœtid odour. In practice, mallein is used diluted as 1 in 8 or 10 of carbolised water 5 p. 1,000.

In a glandered horse, the subcutaneous injection—at the neck or behind the shoulder—of a very small quantity of mallein ($\frac{1}{4}$ of a cubic centimetre of raw mallein, 2 cent. of mallein diluted 1 in 8, or $2\frac{1}{2}$ cent. of the dilution of 1 in 10), produces a characteristic reaction. In a few hours there forms at the place of injection a hot, inflammatory swelling, distended, very painful, always voluminous, sometimes enormous. From all sides of the tumour there radiate wavy lymphatic streaks, hot and painful when touched, stretching away towards the adjoining ganglions. When the mallein is aseptic and the injection made aseptically, this swelling never suppurates, but it increases in size during 24 to 36 hours and persists for several days; then it gradually diminishes, very slowly, and finally disappears at the end of 8 or 10 days. With the growth of this swelling the general condition of the patient alters completely; he becomes dull and dejected, the face becomes shrunken, the eye has an anxious look, the coat lustreless and staring, the flanks contracted, the respiration hurried; the appetite seems to be suspended, frequent shudders are observed to pass through the muscles of the forelegs, sometimes even the trunk is subjected to violent convulsive shocks. If we bring the animal out of his stable we are struck with his wretched look, with his stupor, with his complete prostration. The most active horse, the most fractious, the most dangerous, is completely transformed; he has become listless, indifferent to all his surroundings, quite tractable; one may do with him as one likes.

These general phenomena constitute what we in France call the organic reaction; they are not always so clearly marked; one can observe great differences in their intensity according to the patient, but they are never completely absent. On the other hand, the *thermic* reaction never fails to show itself; in a few hours the central temperature of the glandered horse gradually rises 1°·5, 2°, 2°·5, and even more above the normal. The rise in temperature, noticeable even about the eighth hour after the injection, persists for a long time; it attains its maximum between the tenth and the twelfth hour, occasionally not till the fifteenth, and more rarely about the eighteenth hour. An important fact to note is that the phenomena called forth in glandered horses by the injection of mallein persist for a long time; after 24, 36, and even 48 hours, prostration still exists, and the temperature remains more than one degree above the normal. In practice it is advisable to take the temperature of the suspected animal before the injection of the mallein, then every two hours, beginning at the eighth and going on to the twentieth hour after the injection, but it may be sufficient to take the temperature four times, viz., 9, 12, 15, and 18 hours after injection.

In the case of healthy horses, on the contrary, the injection of mallein, even in a much larger dose, remains without effect; the temperature remains normal, the general condition is not affected; there is produced at the point of injection a little œdematous swelling, somewhat hot and painful to the touch, but the œdema, instead of increasing, diminishes rapidly, and disappears in less than 24 hours.

* Autoclave, a pot for cooking, with a tight-fitting lid to prevent evaporation.

The reaction called forth by the injection of mallein is quite specific; when it shows itself it enables us to state at once and with certainty that glanders-lesions exist, even when they are quite minute; when the reaction does not take place we may be sure that the animal experimented on is not glandered, whatever be the appearance of the suspected lesions. But the use of mallein can give really useful indications only when, and as far as, we can remove the causes of error that have been pointed out to us by experience. For example, it would be imprudent to employ mallein in the case of animals already fevered; the thermometric indications might be thereby falsified so far as to bring out wrong conclusions. Again, all animals subjected to the treatment must be removed as far as possible from atmospheric variations and the influence of strong sun-heat, fog, rain, wind, etc. If it be true that the majority of horses are unsusceptible, or nearly so, to these influences, there are still some which are susceptible, and suffer therefrom, apart from all other causes, variations of temperature amounting to 1°·5, 2° and even more; we should thus be exposing ourselves to the risk of serious error if we injected mallein into horses exposed to atmospheric rigours, especially if we confined our observations to thermometric indications. Lastly, it must not be forgotten that certain diseases—strangles, for instance—produce frequently great daily variations in the temperature of patients; therefore when we have reason to believe ourselves in presence of a disease of this kind we must make sure that the increase of temperature consequent on injection of mallein is persistent, and that the organic reaction is clearly present.

The question arises whether animals found by the help of mallein to be glandered ought to be immediately slaughtered? I say no; the experience of the last few years goes to prove that amongst these animals there are some which, when removed from the infected centre and thereby withdrawn from all chance of new contamination, recover from the glanderous pulmonary lesions, the existence of which had been revealed by the mallein. We ought therefore to confine ourselves to the destruction of those which, *in addition to* the reaction, present some clinical indication of the disease, such as ulceration of the nose, indurated glands, suppurative lymphangitis, sarcocele, etc. The others must simply be removed from amongst the healthy animals and subjected from time to time—say every two months—to the mallein test. If any of these should eventually show the clinical signs of glanders they ought to be slaughtered at once; on the other hand, those animals which have stood two successive doses of mallein without reacting ought to be considered definitely cured, restored to their places, and put at the free disposal of their owners.—*M. Ed. Nocard* in the *Recueil de Médécine Vétérinaire.*

STRICTURE OF THE URETHRA AND CROUPOUS CYSTITIS.

A VETERINARY surgeon was called in to examine a horse that had become emaciated, and whose temperature had risen to 40° cent. (103·5 Fahr.). The sheath was swollen and hot, and the end of the penis, which projected therefrom, was in the same condition, but could not be pulled out any farther. Inside of the sheath a large swelling, twice the size of one's fist, could be felt, and in front of this was a strangulation of the penis. The urinary bladder, as could be felt per rectum, was tightly stretched, and micturition was no longer possible. No course was open but to amputate the penis. The horse was cast and chloroformed, and the penis drawn forward as far as was necessary. In doing this the strangulation was found five centimetres (two inches) above the glans and farther up was the swelling. The urethra was opened a little farther upwards, and the surgeon succeeded, by pressure applied to the rectum, in emptying the bladder of its contents—a pulpy mass

with croupous shreds. It was discovered, also through the rectum, that the wall of the bladder was thickened: one felt a kind of *sandy* sensation between the fingers. The case was clearly one of croupous cystitis. The end of the penis, as far as the urethra had been slit up, was cut off—of course after ligature—and the bladder was syringed. The symptoms of acute cystitis persisted for some fourteen days, but otherwise the case went favourably. The amputated part of the penis was 20 centimetres (about 8 inches) long. The swelling was very hard, and contained a cavity with a wall of the thickness of a finger and sunken contents, whence a canal led to the injured urethra. The cause of the trouble could not be discovered.—*Schweizer Archiv. für Thierheilkunde.*

EXCISION OF THE CLITORIS.

In an interesting article contributed to the *Recueil de Médécine Vétérinaire*, Mr. P. I. Cadiot, of Alfort, writes as follows, with reference to the case quoted in our July nnmber:—"Observations published by writers who have performed removal of the ovaries, in order to counteract nymphomania in the mare and in the cow, may be classed in three groups, if we consider them from the point of view of the therapeutic results. In a certain number of cases the cure has been complete, in others there has been only an improvement more or less pronounced, and in a third class the genesic troubles, the morbid irritability, the tendency to kick and bite have persisted without any modification worth noting. After collating my facts, gathered since 1883, I find that the figures are about equal for all these categories, that is, about one-third of cures, one-third improvements, and one-third failures.

Since the therapeutic treatment became simplified, ovariotomy of the females of our larger domestic animals has come to be an operation within the reach of all practitioners, and asepsia enables us to avoid the infectious complications which used to cause a great mortality. Yet one hesitates to propose the operation for fear of a therapeutic failure. It is certain that the operation may fail when the troubles which we wish to combat have really their source in the genital apparatus. This explains why Delafond has made trials of cauterisation and excision of the clitoris in the case of "hysterical" mares and cows. M. Weber tells me that he formerly performed removal of the ovaries and clitoris, but without the slightest benefit. Abroad the operation has been performed by several surgeons with varying results, but no more than with us in France has the operation been mentioned in special works. In a great number of our castrated females the persistence of nymphomania, with all its characteristics and all its troubles, is connected with a variety of causes, but I am inclined to think that very often the clitoris plays a principal part in this persistence. In support of this idea I might cite examples and facts taken from human pathology. I will mention only the well-known fact that women who have undergone ovariotomy have still sexual feeling. If in the absence of the ovaries the clitoris can preserve its functional attributes—its excitability or its physiological irritability—it may quite well, under the same conditions, be the seat of hyperexcitability or morbid irritability, and for the females of our larger domestic animals affected with nymphomania the chances of therapeutic success in a surgical operation are more numerous when both clitoris and ovaries are removed than when only the latter are removed.

Some facts have been published which go to show that even the simple removal or destruction of the clitoris has dispelled the troubles connected with nymphomania. Here is one from my own practice. Some months ago a client sent me a mare that for some time back had been almost unapproachable, and quite unfit for service, and asked me to castrate her. The following

day I performed excision of the clitoris. I don't know how the case will ultimately turn out, but I can say that from the fourth day after the operation onward, everybody was astonished at the change in the character of the animal. To sum up, I am of opinion that excision of the clitoris, performed along with castration, will increase the number of successes in the surgical treatment of nymphomania. And, seeing that the simple removal of the clitoris has given some cures, it may be worth while for some of our *confrères* to try it who do not practise ovariotomy.

The operation is one of the simplest. Excision is preferable to destruction with the hot iron. There is no need to cast the mare, and, of course, still less to chloroform her. Let her be held, as she stands, with two shackles and a noose, with or without the frame; these, and a twitch on the upper lip, will suffice. Two separators, or two forceps pincers, applied to the labia of the vulva and drawn by the assistant, expose the clitoris; two other pincers seizing the lower commissure and the mucous fold above the clitoris assist matters considerably. The clitoris is seized, its periphery marked out by two curving incisions which divide the mucous membrane; then, with the bistouri or the scissors, the body is isolated and cut through near its base. The slight hæmorrhage which takes place may be stopped by passing the hot iron over the sides of the wound.

PROGNOSIS AND DIAGNOSIS BY SMELL.

At a recent meeting of the *Société Centrale de Médecine Vétérinaire*, M. Weber asked leave to read a letter from a professional friend on the above subject, and prefaced it by the following remarks:—"Certain clinical experts consider, as I do, that it is very important for the practitioner to be acquainted with all the signs that can guide him in the prognosis and diagnosis of disease, even when these signs or indications are based only on smells. The facts narrated by my correspondent appear to be of very great value in this direction." The letter ran as follows:—"Everybody knows what valuable indications surgeons find in the odours exhaled by their patients; the apple-smell, the mouse-smell, and all the other various and characteristic fœtid odours. Amongst these symptomatic odours, M. Bissauge specially mentions the garlic-smell, characteristic of phosphorated hydrogen. I think he is right, and I wish to take you back with me thirty years, and point out to you, by reference to an experience of mine, the prognostic and diagnostic value of this particular odour, which is, in my opinion, an infallible indication in the case of cattle. About the year 1863 I was requested to treat a cow that was suffering from a severe attack of enteritis. A colleague, M. E. Fréminet, was called in to consult with me, and it was he who caused me to remark the very pronounced smell of garlic exhaling from the mouth of the patient, and he added that this sign never failed in grave cases of gastro-enteritis in the cow, and that when the smell was very distinctly noticeable, and especially when exaggerated, the prognosis was always very grave. I cannot remember having seen any mention of this symptom of enteritis and of gastro-enteritis of the greater ruminants, nor have I myself ever observed the symptoms among the smaller ruminants, although I have sometimes found cases of the disease amongst them. Since the above-mentioned case, I have treated a great number of cows for enteritis, and have always noticed this characteristic symptom.

"When a surgeon is called in at the beginning of a case of gastro-enteritis and there is as yet only slight and intermittent tympanitis, and the animal has no violent colic attacks, and the excreta are not yet hard, provided the garlic-odour do not exist or be scarcely noticeable, the surgeon may give a favourable prognosis and bring about a rapid cure by attention to diet, by white

drenches and a decoction of linseed mixed with a third part of infusion of balm-mint and perhaps a little sulphate of soda added. But if the garlic-smell be very marked, the inflation pronounced and constant, if there be constant moaning, with trembling and feverishness, then the prognosis is serious, for the recovery—if it take place at all—will be slow, and it will be obtained only by the administration, at the very commencement of the attack, of chlorhydric acid (10 grammes for 100 grammes of alcohol in 2 litres of infusion of balm-mint), severe diet, white drenches, and, from the third day onward, aloes (25 grammes) mixed with ipecacuanha (15 grammes).

"I would only add that if smells are important elements of diagnosis, they are at least equally reliable as helps to prognosis.—Yours faithfully, EMILE THIERRY."

Notes and News from Foreign Journals.

STRANGE CARDIAC DEFECT.—Veterinary-Surgeon Zundel reports a curious case of a nine-months-old bullock which the owner was obliged to slaughter. The animal, in spite of having a good appetite, had never thriven and had latterly been subject to sudden attacks of giddiness. The heart when examined after death was found to be very heavy and externally showed no peculiarity, but on further investigation Zundel found that the septum was entirely wanting; the whole inside of the organ formed a single chamber. The valve was quite normal.—*Berliner Thierärztliche Wochenschrift.*

ALOPECIA IN A CALF.—A five-weeks-old calf, already weaned, which had at its birth been covered with the normal quantity of hair, became in eight days completely hairless and bare, with the exception of a few small spots on the back, legs, tail, and ears. Even on these places the hair was very loose and could be easily pulled off. In spite of this the animal was quite lively, did not shiver and had a good appetite. The owner had it covered with a blanket and rubbed with an ointment consisting of 150 grs. (5¼ ozs. av.) of swine-fat, 40 grs. tincture of cantharides and 5 grs. creolin, in doing which the body was treated in ten different sections. After fourteen days of this treatment the first reddish-grey "down" appeared, almost like that of young goslings, and after some six or eight weeks the calf was practically restored to normal condition as regards hair—which, by the way, was of its original light-brown colour.—*ibid.*

ACTINOMYCOSIS OF THE TONGUE IN A HORSE.—Veterinary-surgeon Gruber reports a case of a horse, 14 years old, which began to let his tongue hang out of his mouth and to slaver continually. He could take only liquid nourishment. The tongue was double its normal thickness and showed a number of roundish swellings, some as big as hazel-nuts; these swellings were to be found also in the lips, cheeks and nostrils. The animal was slaughtered, and it was clearly shown that he had been suffering from actinomycosis.—*ibid.*

AMPUTATION OF THE PENIS IN A DOG.—A one-year-old pointer, in consequence of congenital atrophy of the sheath, had its penis exposed for a length of some 6 or 7 centimetres (about 2½ inches). As this affection made the dog useless for sport or breeding, several attempts were made to remove it, but all were ineffectual. It was then decided to amputate all that portion of the penis which remained outside the sheath. For this purpose an elastic ligature was placed above the point at which the amputation was to be made, and the operation was performed with the help of a bistoury and a small saw. There was no bleeding, and the contraction of the urethra, which usually follows this operation, did not take place. The recovery was very rapid.—*Progrès Vétérinaire.*

CHLORINE POISONING.—Veterinary-Surgeon Schultz reports a curious case.

A horse was behaving frantically—at one moment trying to place its feet in the manger, or on the wall of its stable; at another, lying flat on the ground and stretching out its fore-feet, whilst the hind-feet remained passive; then it crouched like a dog, sprang up, placed its fore-feet crosswise, thrust its head under its body, then tried, by twisting its neck, to touch its back with its head, and screamed several times. Mr. Schultz succeeded in injecting morphia, and then the animal became quieter, but sweated heavily. An injection of 1½ grains of eserine produced copious defecation. After a few hours the symptoms disappeared, and there was no return. Next day the cause of the disturbance was discovered—grass and hay had been given to the horse, taken from a meadow which had been let as a bleachfield, and on which a good deal of chlorine had been sprinkled in the course of bleaching operations.—*Wochenschr. für Thierheilkunde.*

Honour to Veterinary Surgeons.—We are glad to see from the *Recueil de Méd. Vét.* that M. Chauveau, Inspector of Veterinary Schools in France, has been created Commander of the Legion of Honour, having been *Officier* since July, 1880. Six French veterinary surgeons have been raised to the dignity of *Chevaliers du Mérite Agricole.*

Notes and News.

At a meeting of the Council of the Royal College of Veterinary Surgeons held on Tuesday, July 2nd, Mr. James F. Simpson, F.R.C.V.S., of Maidenhead, was unanimously elected President for the ensuing year. Mr. Simpson is a well-known veterinary practitioner at Maidenhead, of which town he is a Justice of the Peace, and he served the office of Mayor in 1893.

Canine Sagacity.—The pretty village of West Stafford, a few miles from Weymouth, has a dog story which shows the great sagacity of certain members of the canine family. The South-Western Railway intersects Mr. Smith's farm, between Dorchester and Moreton, and the trains between these two stations are usually run there at full speed. Some three-quarters of a mile from the house rises a high embankment where the line crosses the valley, and about nine years ago Mr. Smith arranged to have his daily journal thrown by the guard as the train passes this particular spot. "Pompey," a spaniel, took a daily walk for some time with his master to pick up the paper. The dog was not long in grasping the purport of this daily walk, and after a time he began to be despatched alone. In time he became so habituated to the work (says *Black and White*) that for the last two or three years he has required no order, but has left of his own accord at the exact time. He trots along the lanes and across the meadows, quietly waits by the side of the line till the train dashes past, when he is instantly on the alert, ofttimes trying to catch the paper in his mouth as it falls from the hand of the guard. On securing the object of his quest, the animal at once makes for the house. When he reaches home he delivers the journal and is rewarded with his daily meal.

Information reaches me from Brussels that the Belgian Government is reconsidering the order issued in November last prohibiting the importation of Canadian cattle. It will be remembered that the lungs of the suspected animals were submitted to Professor Nocard, the eminent Continental pathologist, and that he was not able to say that the disease was pleuro-pneumonia. In addition to this important information in favour of the Canadian contention that the disease does not exist in Canada, there is also the fact that there have been no outbreaks in the Dominion; and, besides, it is well known that the Belgian consular authorities have been making exhaustive inquiries into the matter in Canada on behalf of the Government they represent. Although

no official information is actually forthcoming on the subject, it is generally understood that it is the intention to permit some experimental shipments to be made from Canadian to Belgian ports. The animals will not be slaughtered at the port of landing, but will be taken, under supervision, to various destinations, and then slaughtered under the auspices of the Government veterinary authorities. The impression prevails that if the experimental shipments turn out satisfactorily it will result in the existing embargo on the importation being entirely removed. The hope is being generally expressed in Canada that the new Government will shortly take up the question of the Canadian cattle trade, and it is felt that this can be done with greater chances of success than would have been possible had Mr. Chaplin been appointed President of the Board of Agriculture, as he has expressed himself so strongly on the subject, paying more attention, however, to its political than to its pathological aspect. Canadians feel that they have a serious grievance in the matter, in so far that the country has been scheduled on account of a suspicion that pleuro-pneumonia exists in the country. It is nearly three years now, however, since the difficulty arose, and not only have there been no outbreaks, but there has not been even a suspicious case. The Canadian Government has done everything that was possible to investigate the matter, and the lungs of the animals slaughtered in the chief centres in the Dominion for a period of one month were examined by veterinary authorities. If the disease had obtained a footing in Canada, it must have been discovered with such a severe test. In any case, however, it is recognised that nothing more can be done to prove that the flocks and herds of Canada are free from the dread disease.—*Scotsman.*

In our issue of June 29th, and under the heading "Advertising Extraordinary," we directed attention to the methods followed by the "Star" Veterinary Medicine Manufacturing Company in obtaining orders, and in our issue of July 6th we referred to a letter we had received "from Mr. Gray, who describes himself as principal consulting veterinary surgeon to the company." Mr. Gray has since called upon us to protest against this use of his name, and he has requested us to publish the subjoined letter:—

33, Langham Road, West Green, N.,
July 13th, 1895.

Sir,—I have seen in your issue of June 20th, reference to a letter which purports to have been written by me on behalf of the "Star" Veterinary Medicine Manufacturing Company.

I beg to say that this letter was not written by me, or with my knowledge or authority. At the present time I have no connection whatever with the company, and I have never had any beyond a six months' agreement as consulting veterinary surgeon—an agreement that expired two years ago, when the company undertook that my name should be withdrawn from their circulars and pamphlets.—Your obedient servant,

Charles Gray, M.R.C.V.S.

We can only say upon this that the letter we received purported to be written by Mr. Gray on behalf of the company, and that on printed matter which was sent to us with the letter Mr. Gray's name figures prominently. He now tells us that he never had any connection with the company other than a six months' agreement as consulting surgeon—an agreement which expired two years ago; that it was a part of the understanding then arrived at that his name should not be used by the company, and that the letter sent to us in his name is an impudent imposition. That being the case, Mr. Gray will no doubt instruct his solicitors to take the necessary steps against the company Meantime the question suggests itself—what is the value of the testimonials upon which the company relies in proof of its claim that its medicines are of first-rate quality? If the company is capable of using another man's name without his authority, it is capable of manipulating testimonials. We do not say that it has manipulated them, but if the company is worked on respectable lines it will be quick to answer Mr. Gray's disclaimer. And who are the

company? We are told that they are Messrs. E. Jacobs and Son, who some time ago were carrying on business in Houndsditch, and that Messrs. E. Jacobs and Son are neither chemists nor veterinary surgeons.—*To-day.*

Correspondence.

EDINBURGH,
July 10th, 1895.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—I shall be obliged if you will allow me, through the medium of the JOURNAL, to draw the attention of the profession to the subjoined partial report of a meeting of the Town Council of Edinburgh, which I have cut from to-day's *Scotsman*, and specially to that portion of it where reference is made to what, in the words of our speaker, was termed "Canvassing for Work."

The Dick College.

Under recommit, the Lord Provost's Committee recommended approval of the conditions of management of the Royal (Dick) Veterinary College as amended. The Lord Provost made an explanation of the rearrangement of the affairs of the College which had been made since the death of the late Principal, the chief of which were the establishment of a fee fund, the regulation of the duties and responsibilities of the Professors and Lecturers, the establishment of a sinking fund to pay off the debt, the allocation of the salaries of Professors and Lecturers, and arrangements for the distribution of the surplus.

Attention was called to the fact that Professor Dewar had only a salary of £350, and it was asked by Mr. Waterston if this was owing to the fact that there was an understanding that he should be appointed Inspector of Byres?

The Lord Provost said the Council was in no way committed to appoint Professor Dewar Inspector of Byres, though he was *ad interim* discharging the duties and doing them well.

Mr. Brown challenged that statement, and said they would have something to say on the point when it came up.

Mr. Mitchell Thomson asked if the trustees of the Dick College were understood to sanction the Professor's canvassing for work.

The Lord Provost replied in effect that the Trustees did not sanction it, but that they did not object to the Professors bringing the veterinary and the forge business under their friends' notice. If any of the Professors had asked any of the Councillors to send their horses to the College to be shod, where was the harm? Business was greatly pushed now-a-days.

Mr. Telfer asked if this was to be considered a municipalisation of horse-shoeing? (Laughter.)

Principal Williams, as a member of the Council, entered his protest against their approving of this system of canvassing for work by the Professors of the Dick College. It was against the dignity of the profession.

The recommendations of the committee were then agreed to—the Lord Provost remarking that they could give them a year's trial at any rate.

Those of your readers who take an interest in things outside of your ordinary articles, might have noticed that at the last annual meeting of the Royal College of Veterinary Surgeons I drew attention to this very subject. I did so for the purpose of eliciting, if possible, some authoritative opinion as to how far one might go without laying himself open to a breach of clause 6 of the Veterinary Surgeons Act of 1881. I said, referring to the fact that the annual report stated that 33 complaints against members of the college or registered practitioners for "unprofessional advertising" had been dealt with, "this phrase was one of those beautifully ambiguous ones for which the Royal College was celebrated. What was meant by unprofessional advertising? In my ignorance I had always thought that all advertising was unprofessional. If there was such a thing as unprofessional advertising, it logically followed that there was some kind of advertising which was

professional! What was professional and what was unprofessional advertising? Would the council who were responsible for the report, be good enough to say. If the council meant that a young man having just passed, and was in this position that he must make his living, and to this end, that he may or may not circulate a business card, why did they not plainly say so? If on the other hand the council considered that practitioners might or might not advertise in the columns of newspapers and among the lists of horse sales, &c., that they were this, and that, and the other thing, then why did not the council say so also? They must not deal in ambiguities. There was, however, a worse offence in his opinion than advertising, there was solicitation of other people's clients, and that offence he was sorry to say was to his knowledge becoming quite common."

No one else in the room took the matter up. I am just a little afraid the subject was just a little delicate, and all the reply I got from the council through its late president was that it was better to leave the question indefinite, and that he thought there was a considerable amount of virtue in mystery, that there was nothing more impressive than mystery, and so let us leave this matter as mysterious as an Act of Parliament can make it.

That is not my opinion, however; and I submit, Sir, it was no answer to a well-founded complaint. I think the time and opportunity has come when those members of the profession who can honestly do so, should speak their minds freely on the subject.

Personally, I do think there is some excuse for a young, struggling man, issuing notice or even advertising his intention to commence practice, and where he may be found; but I consider it bad form to add to his name a string of letters which he very well knows are worthless so far as they are a guarantee of his professional position is concerned (they help to gull the public by making believe), and still worse form for an established practitioner to advertise the performance of certain operations, &c., &c., the sort of thing Master Gelder Giles or Farmer Myles, and all that sort of fraternity do; but hardly the thing for a member of a profession which has aspirations, but of which, knowing the practices common to some of its members, it is sickening to hear of what is called its "great advancement in the professional and social scale." Social elevation, it is called. What humbug, what rubbish. Where is the social elevation? Ask the rank and file for an answer. Granting, however, for argument sake, that some advertising is permissible, is there any excuse—any defence—for solicitation by a member of the profession of his professional brothers' clients?—save the word "brother"—more humbug; worse hypocrisy. I look upon this practice as the very meanest and most contemptible a man can be guilty of. Certainly it is common in trade. Tradesmen live largely by canvassing. But I ask, is it looked upon as permissible by any profession or professional man, which, or who, values its or their professional status and the desirability of observing professional etiquette? I am amazed that there should be found among the Town Council of Edinburgh gentlemen who could see their way to defend, to palliate, the practice in the instance giving rise to the discussion. Can anyone imagine the illustrious founder of the institution in question, himself a member of the Town Council, descending to such a thing? No. William Dick did not attain his eminence nor his extensive clientele by such methods. I can only account for what I would call the town council's weakness by the fact that a number of them are engaged in commercial pursuits, and naturally view this sort of thing with a more lenient eye than an equal number of members of the professions would.

All the more reason, say I, for the veterinary profession itself speaking its mind, let us have it out, and let us understand each other. If advertising and solicitation are to be considered quite the thing to do, let us agree upon it or otherwise; and if they are not, let us arrive at some conclusion as to how far

the profession is prepared to go, on saying what they are. If they are offences are they in a professional sense disgraceful ones?

Personally I am not aware that any amount of advertising, canvassing, or solicitation has ever hurt me, nor do I think it ever will. Some of my professional brethren have had a fair trial at it, and I am happy and pleased to be in a position which enables me to invite them to keep up the fun. It is not so with everyone, however; one hears from many quarters all over the country how widespread and pernicious both practices are becoming, how by causing unhealthy competition, they have been the means of lowering the earning capacity of the profession, how in spite of veterinary medical societies, they have been the means of creating distrust, dissension, and dislike among their members, and one can well imagine how injurious in the eyes of a discerning public they must be—to what little status the profession has attained, if they are not suppressed.

Once again, then, I say, let the profession speak out; it has grumbled about the thing long enough; let us have its mind now, and let the result, if condemnatory, be communicated in no uncertain terms to its representatives in council, and further I would suggest, let the profession send no man there who is not prepared to take up a very firm attitude on the question. No man who would find excuses either for advertising of certain kinds, or for solicitation, would get my vote, the man who will pledge himself to do all in his power to suppress them, will get it on this basis. Will the profession take the matter up.—Yours very sincerely, R. RUTHERFORD, F.R.C.V.S.

LIABILITY FOR ACCIDENTS.

July 19th, 1895.

To the Editor of the VETERINARY JOURNAL.

SIR,—I should like to ask through the medium of the VETERINARY JOURNAL what a veterinary surgeon's position is, supposing an accident happens to anyone assisting him? I had recently occasion to cast a big cart-mare at a farm, four labourers assisting me. While the animal lay struggling on the ground the hobble chain broke near the end, the hobbles flew off and one of them struck the man who was holding the mare's head in the face and stretched him senseless on the ground. I at first thought that the poor fellow was killed, but it fortunately turned out that he was not badly hurt. The chain was a comparatively new one, but it certainly contained a faulty link; supposing that by an evil chance the man had been killed or seriously injured, could damages have been recovered from me? I think that this is a matter of considerable importance, and I should very much like to hear the opinion of some of your readers on the point.—Yours truly, M.R.C.V.S.

EDITORIAL NOTE.

Owing to pressure on our space this month, we are unable to print several important communications. We hope to produce these in our September number.

Communications, Books, Journals, etc., Received.

Midland Counties Veterinary Medical Association; E. Wallis Hoare, F.R.C.V.S.; The Journal of Comparative Medicine and Veterinary Archives; Abdominal Surgery, by Professor J. Macqueen, F.R.C.V.S.; Henry J. Dawes, Esq.; Bulletin of the Johns Hopkins Hospital; Agriculture Journal of the Department of Agriculture, Cape Colony; The Meat Trade of Austria; The Medical Magazine; The North British Agriculturist, Summer Number; "Recueil de Médécine Vétérinaire"; Joshua A. Nunn, Esq.; etc., R. Rutherford, Esq., F.R.C.V.S.; Dr. Arthur Sansom; American Veterinary Review; Fifth Report of the Royal Commission on Horse Breeding; The Johns Hopkins Hospital Reports.